1809. Born in Harmary St. / now East Broadway
1822 - 29 allen St. late 33
1823 - 19 "
1824 - 26 "
1825 - 114 Water St
1828 - 238 Bowery
1831 - 29 allen
1836 - 105 Attorney
1837 - 238 Rivington
1838 - 97 attorney
1849 - 67 St Marks Place
1867 - 22-E-125th Street
1868 - Mount Morris Place. 124th St.

John J. Nestle

PB171/AE

John J. Restell,

Residence 114 Water
1826 — Shop 64 Cliff St

Residence
238 Bowery 1830, N. Y.

Same 8. 1829

John J. Restell.
Residence — 97 Attorney St
Shop 50 Mercer St. — 1842

Residence 67 St Marks place
Shop 49 Eldridge St 1847. 1849

Shop 138 Centre St — 1832
67 Green — 1833
50 Mercer — 1840
30. 32. 34. 36 Allen.
49 Eldridge — 1847 to 1868

Frontispiece.

Belle Lawder Invent. 1741. The Lander Del

John, J. Estell 29 Allen St. 1832

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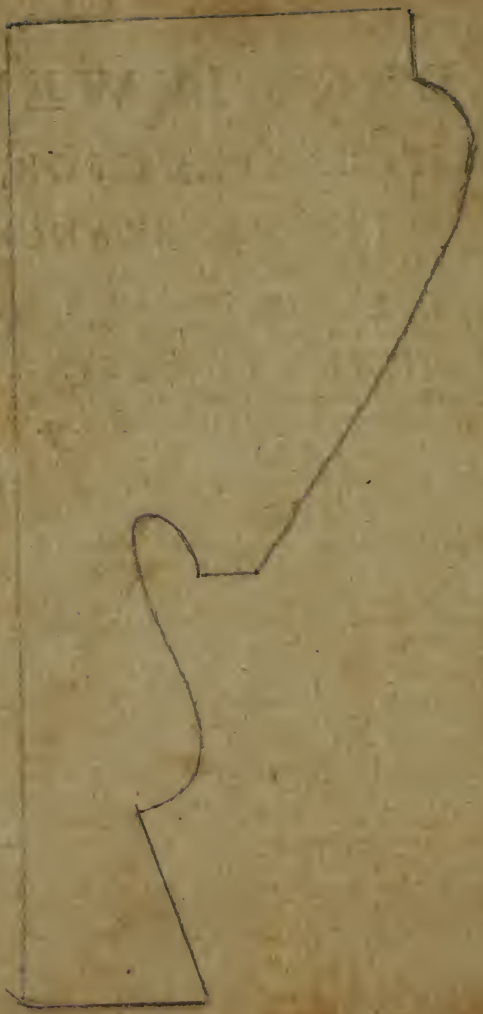


INTRODUCTION.

NOTWITHSTANDING there are many Volumes already extant, on the Subject of Architecture; yet, as not one of them are made a fit size for the ocket; and it being an Impossibility for the general Part of Workmen to re-in and carry in their Minds, all the useful Rules and Proportions, by which Vorks in general are performed: I have therefore, at the request of many good Vorkmen, and for the Sake of young Students, compiled this Work; wherein have reduced the whole to such short and easy Rules, that the Workman ay, not only at the first View renew his Memory, as Occasions may require, it Apprentices, who may be absolutely unacquainted with this noble Art, and e so unfortunate as many have been and are, to be bound to Jobbing Masters, ho know but little; may without the Help of any, by assiduous Application at eir Leisure Hours, in Evenings when the Business of Days is over, &c. make emselves such Masters herein, that few Masters are able or willing to make em. And indeed I must own, that 'tis a Pleasure to me, to see the Spirit of mulation so powerful among young Builders at this Time; when every one of nse is endeavouring to become the most excellent in his Way, and thereby ake himself the most useful both to himself and his Country.

IT is useful Knowledge only, that makes one Man more valuable than another, nd especially that part of Knowledge, which immediately concerns the Business is is to live by; and therefore, if this Work should prove a Help to the Im-ovement of Knowledge in *Youth* (for whose Sakes 'tis chiefly intended): and no Affront to the *sage Workman*, by re-informing him of those Rules which ive slipt his Memory, and informing him of others which he never knew, it ill answer the desired End of their hearty Well-wisher,

London, March 25th, 1741. THO. LANGLEY.

London. March 25th 1741.

CHAP. I. *Of the Orders in general, and of their principal Parts.*

THE Orders in general, are the *Tuscan*, *Dorick*, *Ionick*, *Corinthian*, *Composite*.

THEIR principal Parts are their Pedestals, Columns, and Entablatures.

THE Height of the Pedestal in every Order, is always one fifth of the Height of the entire Order.

THE Height of the *Tuscan* Column is 7 Diameters, the *Dorick* 8, the *Ionick*, and the *Corinthian* and *Composite*, each 10 Diameters.

THE *Tuscan* Column is diminished at its Astragal or Neck of its Capital, 4th of its Diameter next above its Base; the *Dorick* one 5th; the *Ionick*, *Corinthian*, and *Composite*, each one 6th.

THE Diminution of every Column begins at one third of the Shaft's Height above the Base.

THE Height of the *Tuscan* and *Dorick* Entablatures, are each equal to one fourth of their Column's Height; and the *Ionick*, *Corinthian*, and *Composite* one fifth of their Column's Height.

THESE general Proportions of the principal Parts being first understood, the Proportions of their particular Parts, may be easily understood also as following.

CHAP. II. *Of Pedestals, and their Parts.*

EVERY perfect Pedestal consists of three principal Parts: Namely, A Dado or Die, and Cornice, which are divided as follows.

The Division of the principal Parts of Pedestals explained.

RULE. Divide the given Height in 4 Parts, as in Plates I. X. XXXIX. and LVII. give the lower 1, to the Height of the Plinth; one of the next 1, to the Height of the Mouldings on the Plinth; half the upper to the Height of the Cornice; and the Remains between will be the Height of the Dado.

WHEN a Column is placed on a Pedestal, the Projection of the Pedestal Dado, is found by the Projection of the Plinth to the Base of the Column which always stands perpendicular over the Upright of the Dado. But if a Pedestal is to be made without a Column, the Breadth of the Dado must be found, for we can proceed to determine the Projections of the several Members in the Base and in the Cornice; because 'tis from the Upright of the Dado that their Projections are made; and which are found by the following Rules.

The Breadths of Dados to Pedestals explained.

RULE I. *To find the Breadth of the Dado of the* Tuscan *Pedestal*, Plate

DIVIDE the Height of the Plinth and its Mouldings in 5 Parts, and the 1 to 7; on z with a Radius of 4 of the great Parts, and 4 sevenths, describe an arch xg; then zg is the Semi-breadth required.

R

RULE II. *To find the Breadth of the Dado of the Dorick Pedestal*, Plate X.

DIVIDE the Height of the Plinth in 5 Parts, and the upper 1 in 3, turn up 1 of the 3 Parts to *n*, and on *x* with the Radius of 5 Parts, and said one third, describe the Arch *b y*; then *x y* is the Semi-breadth required.

RULE III. *To find the Breadth of the Dado of the* Ionick *Pedestal*, Plate XXI.

DIVIDE the Height of the Plinth in three Parts, the upper 1 in 3; and the upper 1 thereof, in 3 again; then abating the 2 upper small Parts, with the Remains of the Plinth's Height, on *x*, describe the Arch *w y*; then *x y* is the Semi-breadth required.

RULE IV. *To find the Breadth of the Dado of the* Corinthian *and* Composite *Pedestals*. Plate XXXIX. and LVII.

DIVIDE the Height of the Plinth in 3 Parts, and the upper 1 in 3, on *x*, with the Radius of two Parts, and the 2 thirds, describe the Arch *w y*; then *x y* is the Semi-breadth required.

BEFORE I shew how to determine the Projections of the Mouldings on the Plinths, and in the Cornices of the Pedestals; I must shew how to divide their respective Heights. And, first, of the Mouldings on the Plinths of the several Pedestals.

The Divisions of Mouldings on the Plinths of Pedestals explained.

RULE I. *To divide the Heights of the Mouldings on the Plinth of the* Tuscan *Pedestal*. Plate I.

DIVIDE the Height in 6, as at B, give the under and upper ones to the Fillets, and the Middle of 4, to the *Cima recta*.

RULE II. *To divide the Heights of the Mouldings on the Plinth of the* Dorick *Pedestal*. Plate X.

DIVIDE the Height in 4 Parts, as at B; give the upper one to the Cavetto; half the next to its Fillet; half the lower one to the lower Fillet; and the Remains to the *Cima-recta*.

RULE III. *To divide the Heights of the Mouldings on the Plinth of the* Ionick *Pedestal*. Plate XXI.

DIVIDE the Height in 2, as at B; and each in 4; give the upper 1 and half to the Cavetto; the next half to its Fillet; the next 1 to the Astragal: the lower 1 to the Fillet; and the Remains to the *Cima*.

RULE IV. *To divide the Heights of the Mouldings on the Plinth of the* Corinthian *Pedestal*. Plate XXXIX.

DIVIDE the Height in 4, as at B; the upper 1 and 3d downwards, each in 3; give the upper 1 and half to the Cavetto; the next half to the Fillet; the next 1 to the Astragal; the lower 4th to the Height of the Torus; and one third of the next to its Filler.

RULE V. *To divide the Heights of the Mouldings on the Plinth of the* Composite *Pedestal*. Plate LVII.

DIVIDE

DIVIDE the Height in 4; and the upper and third Part downwards, each in 3; give the upper 2 of the upper Part, to the Cavetto; the next to its Fillet; the ower 4th Part to the Torus, and one third of the next Part to its Fillet.

The Division of Mouldings in the Cornices of Pedestals explained.

RULE I. *To divide the Heights of the Mouldings contained in the Cornice of the* Tuscan *Pedestal.* Plate I.

DIVIDE the Height, as at *A*, in 6 Parts; give the upper 1 to the Regula; the next 3 to the Plat-band, and the lower 2 to the *Cima reversa.*

RULE II. *To divide the Heights of the Mouldings contained in the Cornice of the* Doricke *Pedestal.* Plate X.

DIVIDE the Height, as at A, in 4; give half the upper 1 to the Regula; the next 1 and half to the Plat-band; the next 1 to the Ovolo; the upper one third of the lower 1, to the Fillet; and the remaining two thirds of the lower 1, to the Cavetto.

RULE III. *To divide the Heights of the Mouldings contained in the Cornice of the* Ionick *Pedestal.* Plate XXI.

DIVIDE the Height in 12 Parts, as at A; give the upper one to the Regula; the next 2 to its *Cima reversa*; the next 3 to the Plat-band; the next 3 to the Ovolo; the next 1 to the Astragal: Half the next 1 to its Fillet, and the Remains 1 and a half to the Cavetto.

RULE IV. *To divide the Heights of the Mouldings contained in the Cornice of the* Corinthian *Pedestal.* Plate XXXIX.

DIVIDE the Height in 3, as at A; also the upper 1 in 6, the lower half of the middle 1 in 3, and the lower half of the lower 1 in 3. Of the 6 upper small Parts, give the upper 1 and one third to the Regula; the remaining two thirds and two Parts to the *Cima reversa*; and the next 1 to the Astragal. Give the last 1, and half the middle great Part, to the Plat-band: Also one third of the remaining half to the Fillet on the *Cima-recta*; and the remaining two thirds, and upper half of the lower great Part to the *Cima-recta.* Lastly, give the upper 1 Part of the half of the lower Part, to the Astragal; half the next to its Fillet, and the Remains to the Cavetto.

RULE V. *To divide the Heights of the Mouldings contained in the Cornice of the* Compofite *Pedestal.* Plate LVII.

DIVIDE the Height in 6 Parts, as at A; give half the upper 1 to the Regula; the next 1 to the *Cima-reversa*; the next 1 and half to the Plat-band; one third of the next 1, to the Fillet on the *Cima-recta*; the remaining two thirds, and the next 1, to the *Cima-recta*; one third of the last 1, to the Fillet on the Cavetto; and the remaining two thirds to the Cavetto.

THE Heights of the several Mouldings on the Plinths, and in the Cornices, being thus found; I shall proceed to shew, how to give each its proper Projecture from the Upright of their Dados.

The Projections of the Plinths, and Members on the Plinths, and in the Cornices of Pedestals explained.

MAKE the Projection of the Plinth from the Upright of its Dado, in every Order, equal to the Height of the Mouldings on the Plinth; and make the Projection of every Cornice the same.

To find the Projections of the several Members.

DIVIDE the Projection of the *Tuscan* Plinth in 6, and of all the other Orders in 4; and then subdividing the Parts, as exhibited in the Scales of Projection, which are placed between the Base and Cornice of each Pedestal: from thence, stop; or terminate the Projection of each Member, as by Inspection is shewn; and thus are the five Orders of Pedestals completed.

CHAP. III. *Of Columns and their Parts.*

A COLUMN consists of three principal Parts, *viz.* A Base, Shaft, and Capital

The Height of Columns explained.

To find the Heights of Columns, having the Heights of the Columns and Entablatures given, these are the Rules.

RULE I. *In the* Tuscan *and* Dorick *Orders.* Plate I. and X.

DIVIDE the given Height of the Column and Entablature in 5 Parts; the upper 1 is the Height of the Entablature, and the lower 4 of the Column. Divide the Height of the *Tuscan* Column in 7, and of the *Dorick* in 8; and 1 is the Diameter of the Column.

RULE II. *In the* Ionick, Corinthian, *and* Composite *Orders.* Plates XXI. XXXIX. *and* LVII.

DIVIDE the given Height of the Column and Entablature in 6 Parts: the upper 1 is the Height of the Entablature, and the lower 5 of the Column. Divide the Height of the *Ionick* Column in 9, and the *Corinthian* and *Composite* Columns each in 10 Parts, and 1 is the Diameter.

The Heights and Projections of the Bases of Columns explained.

THE Height of the Base of every Column, is precisely half its Diameter next above the Base; and the Projection of the Plinth, from the Upright of the Shaft, is always equal to one 6th of the Column's Diameter.

The Height of Plinths to the Bases of Columns, is either equal to half the Height of the whole Base, as in the *Tuscan* Base, Plate II. or to one third of the Base's Height, as in the *Dorick* Base on the Right-hand side, Plate XI. And in the *Ionick, Corinthian,* and *Composite* Bases, Plates XXII. XLI. and LVIII.

To make the Construction of Bases to Columns easy, I will explain, How to divide the Heights, and terminate the Projections of the Members contained in the *Tuscan* and *Dorick* Bases; by which those of the *Ionick, Corinthian,* and *Composite* will be understood, as being no more than Repetitions of the like Rules.

RULE

RULE I. *To divide the Heights, and terminate the Projections of the Members contained in the Base of the* Tuscan *Column.* Plate II.

I. *To determine their Heights.*

DIVIDE the Height in two, and give the lower 1 to the Plinth, as aforesaid. Divide the upper 1 in 4; give the lower 3 to the Torus, and the upper 1, to the Cincture.

II. *To determine their Projectures.*

DIVIDE the Projection of the Plinth, from the Upright of the Shaft in 4 Parts, and the second Part in 4; then 1 Part and 3 fourths of the second, stops the Cincture; and the Torus is always in every Order the same Projection as the Plinth.

RULE II. *To divide the Heights, and terminate the Projections of the Members contained in the* Attick *Base to the* Dorick *Column, on the Right-hand side of* Plate XI.

I. *To determine their Heights.*

DIVIDE the Height in 3 Parts, the middle Part in 4, and the upper Part in 2: Give the lower 1 Part to the Plinth, as aforesaid; three fourths of the next to the lower Torus; and half the upper 1, to the upper Torus. Divide the Remainder between the two Toruses in 6; give the upper and lower ones to the two Fillets; and the middle 4 to the *Scotia.*

II. *To determine their Projectures.*

DIVIDE the Projection of the Plinth in 4 Parts, and the 2d and 3d Parts in halves; from whence perpendicular Lines being drawn up, will terminate the Cincture, and the two Fillets of the *Scotia.*

RULE I. *To describe the Curve of this* Scotia.

DIVIDE the Height in 3 Parts, as at B; and draw the Lines *c b* 2 and *a b.* On *b,* describe the Quadrant *a c*; and on the Point 2, the Arch *cd*, which together form the Curve of the *Scotia* to the *Attick* Base.

I will also now shew, how to describe the Scotia *in the* Ionick, Corinthian, *and* Composite *Bases, as expressed at large by Figure* A. *Plate* XI.I.

DIVIDE the Height *bg* in 7 Parts, from the third Part draw *fc* parallel to the Fillets, and equal to 3 Parts; thro' the Point *f* draw the Line *a e* parallel to *bg*, and make *fa* equal to 4 Parts of *bg*: Draw *a c*, and then, on the Point *c*, describe the Arch *b x d*, and on *a* the Arch *de.*

HAVING thus explained the Bases, or first Parts of Columns, I shall now proceed to the second Parts, which is their Shafts.

THE Shaft of a Column is that Part, which is contained between its Base and Capital; and consists of 3 Parts, *viz.* its Cincture, Trunk, and Astragal; excepting in the *Tuscan,* where the Cincture is made a Part of the Base to the Column.

To render the Shafts of Columns agreeable to the taper Growth of the Trunks of Trees, (with which the first Columns were made) their Shafts, or rather their Trunks

runks are therefore diminiſhed from the lower third Part, up unto the Aſtragal, following.

The Shafts of Columns, and their Diminution explained.

RULE. *To diminiſh the Shaft of a Column.* Plate I. Fig. A.

SET up the Shaft's Height; at *i k*, its Aſtragal, ſet off its diminiſhed Diameter, i.e. three fourths, as being *Tuſcan*. Complete the lower third undiminiſhed Part of the Shaft, and on *a d* its upper Part describe the Semicircle *a b c d*. From *i k*, draw the Lines *i b*, *k c*, parallel to *b n* the central Line, cutting the Semicircle at *b* and *c*. Divide the Arches *a b* and *c d*, each into any ſame Number of parts, ſuppoſe 4: and divide *b n* into the ſame number of Parts alſo, as at the Points *g f e*; through which draw right Lines at right Angles to *b n* of Length at Pleaſure. From the 4 Diviſions in the Arch *a b*, to thoſe in the Arch *c d*, draw Ordnates (as thoſe dotted). Make the Diameter of the Shaft at *e*, equal to the Length of the firſt Ordnate; at *f*, to the Length of the ſecond Ordnate; and at *g*, to the Length of the third Ordnate. Then from the Points *i k*, through the Extremes of the Diameters *g f e*, to the Points *a d*, trace the Contours or Out-Lines of the Shaft's Diminution.

The Manner of Ruſticating the Shafts of Columns explained.

THE Shafts of the *Tuſcan*, *Dorick*, and *Ionick* Columns, are ſometimes Ruſticated; but thoſe of the *Corinthian* and *Compoſite* ſeldom or never.

RULE. *To Ruſticate the* Tuſcan, Dorick *and* Ionick *Shafts.*

DIVIDE the Height of the *Tuſcan* in 7, as in Plate I. the *Dorick* in 8, as in Pl. X. and the *Ionick* in 9, as in Plate XXI then the Blocks and Intervals in the *Tuſcan* and *Ionick* will each be 1 Diameter, and thoſe of the *Dorick*, two Diameters.

THE Projection of the Blocks are generally made equal to the Projection of the Plinth, as expreſſed in the *Tuſcan* Order, Plate I. and continued upright without Diminution; but as the upper Parts of the Shafts ſeem thereby overcharged, I therefore recommend the Diminution to be parallel with the Shaft, as in the *Dorick* Order, Plate X.

The Manner of Fluting the Shafts of Columns explained.

THE Shafts of the *Dorick*, *Ionick*, *Corinthian* and *Compoſite* Columns, are ſometimes fluted and cabled; but the Shaft of the *Tuſcan* Column ſeldom or never is, as being an Embelliſhment too gaudy for ſo robuſt and ſimple an Order, whoſe Beauty conſiſts in its native Plainneſs; and indeed all Columns have a Under Aſpect when entirely plain, than when Ruſticated or Fluted. The *Dorick* Shaft, with reſpect to its *Herculean* Aſpect, ſhould not be fluted; but as the Ancients diſpenſed therewith, the Moderns frequently do the ſame. But however, wherein Majeſty muſt be preſerved, therefore the Ancients allowed but 20 Flutes, and thoſe without Fillets, as in the Left-ſide of Plate XI. thereby making them of a Maſculine Aſpect; whilſt thoſe of the *Ionick* and *Corinthian* Shafts, are charged with 24 Flutes, and as many Fillets (each of which are equal to one third of a Flute) which renders them leſs capacious and of an effeminate Aſpect, agreeable to the Character of thoſe Orders.

RULE. *To divide the Flutes of a* Dorick *Column.* Plate XI.

DIVIDE the Circumference into 20 equal Parts, and draw Lines, thereby making a Polygon of 20 Sides; on each Side complete an equilateral ſpherical Triangle, as *a b c* on the Left of Plate XI. and on the external Angle, as *b*, deſcribe the Curve *a c*, which is the Depth or Sinking in of a Flute.

RULE. *To divide the Flutes and Fillets of an* Ionick, Corinthian, *or* Compoſite *Column.* Plate XXV.

DIVIDE the Circumference of the Semi-Column in 12 Parts, and each Part in 8, as *a b*. Give 3 Parts to each Semi-Flute as *a b*, and *i b*; and 2 Parts to each Fillet, as *b i*.

THE Sinking or Depths of theſe Fillets, are either the Arch of a Quadrant, as thoſe on the Right-hand deſcribed on the Centers *c s*, &c. or of a Semi-Circle, as thoſe on the Left, deſcribed on the Centers *x x*, &c.

RULE. *To deſcribe Cablings, in the Flutes of a Column.* Plate XXV.

ON the Points *z z*, with the Radius *z x*, deſcribe the Arches *y x o*, *y x o*, &c. which are the Baſes of the Cablings, and whoſe Height finiſhes, at the firſt third Part of the Shaft's Height.

RULE. *To ſet out Flutes and Fillets on the Shaft of a Column.* Plate XXVI.

ON a Pannel, &c. draw a right Line, as *a b*, and thereon ſet off 24 equal Parts at Pleaſure, which together, muſt always be leſs than the Girt at the Aſtragal of the Column to be fluted.

DIVIDE any 1 Part in 4 Parts, and take one Part in the Compaſſes, and ſet it off in every of the other 23 Parts; and from the ſeveral Parts ſo divided (which will be to one another as 1 is to 3; that is, a Fillet to a Flute) draw up right Lines at right Angles from the divided Line. This done, ſtrike a perpendicular Chalk-Line down the Front of the Column. And being provided with two ſtraight-edged Pieces of Parchment, &c. therewith girt the Column at its Baſe, and at its Aſtragal. Apply the Girts ſo taken to the parallel Lines aforeſaid, ſo that their Exſtremes ſhall juſt touch the two outer-parallels, as at *e c* and *d f*. Then keeping them there; with a Pencil mark their Edges at the Meeting of each Parallel; and thereby the two Girts will be divided into the Flutes and Fillets, agreeable to your Column to be fluted. This done, apply any End of each of the Parchment Girts to the Bottom and the Top of the Front Central Line: and then embracing the Column at its Baſe and Aſtragal; remove each Girt until you bring the Middle of a Flute on the central Line; and then prick off the Breadth of every Flute and Fillet in the two Girts, which will ſtand exactly perpendicular over each other.

Note, In large Columns it may be neceſſary to ſet out the Breadths of the Flutes and Fillets, in one or more Places, between the firſt third Part of the Shaft's Height and the Aſtragal; which, when required, may be moſt exactly done, by gitting at the Parts required; and proceeding afterwards, in every other reſpect, as aforeſaid.

The

The Fluting of Pilasters explained.

RULE. *Toe flute a Pilaster with Fillets, and a Bead at each Quoin.* Plate XXXVII.

DRAW a Line at Pleasure, as *a b*, and thereon set 31 equal Parts, which together, shall be greater than the Pilaster to be fluted. Take the 31 Parts in your Compasses, &c. and on the first and last Points make the Section *c*, and draw the Lines *c a* and *c b*, which will complete an equilateral Triangle. Set the Breadth of the Pilaster from *c* to *d* and to *e*, and draw the Line *d e*, which being parallel to *a b*, is therefore equal to the Breadth of the Pilaster. Now right Lines drawn, from the 31 Parts, to the Point *c*, they will divide the Line *d e* in similar 31 Parts also. Of which give the two outer Parts to the two Beads at the Quoins; the next two outer ones, to the two outer Fillets; the next 3, to the Breadth of a Flute; the next 1, to a Fillet; the next 3, to a Flute; the next 1, to a Fillet, &c.

NOTE, By the same Rule a Pilaster with Flutes and Fillets only, as Fig. A, is divided from 29 Parts, first set off at Pleasure; and then proceeding as before.

HAVING thus explained the Bases and Shafts of Columns, &c. I shall now proceed to their Capitals.

OF Capitals, there are two Kinds, *viz.* the one consisting of Mouldings only; as those of the *Tuscan* and *Dorick*; and the other of Mouldings and sculptured Ornaments, as the *Ionick*, *Corinthian*, and *Composite*.

The Heights of Capitals explained.

THE Height of the *Tuscan* and *Dorick* Capitals, are each precisely a Semi-diameter, as in Plates II. and XI. The Height of the ancient *Ionick* Capital, in its Mouldings above the Astragal of the Shaft, is but one third of a Diameter, or 20 Minutes; but including the Depth of its Volute, it is 35 Minutes, as in Plate XXIII. which exceeds the Volute to the modern Capital by 5 Minutes. The Height of the *Corinthian* Capital is one Diameter, and one sixth, as also is the Height of the *Composite* Capital.

The Divisions and Projections of the Members in the Tuscan *and* Dorick *Capitals explained.* Plates II. and XI.

RULE I. To divide the Heights and determine the Projections of the Members in the Capital of a *Tuscan* Column or Pilaster.

I. *To divide the Heights of the Members.* Plate II.

DIVIDE the Height in 3 Parts (as on the Left-side). Divide the middle 1 in 6: of which give the lower 1 to the Fillet under the Ovolo; and the other 5 to the Ovolo. Divide the upper 1 into 4; give the upper 1 to the Fillet; and the other 3 to the Fascia of the Abacus. Set down *a b*, half the Height of the Frize or Neck of the Capital, from *b* to *c*, and divide it in 3 Parts; give the upper 2 to the Astragal; and the lower one, to its Fillet.

II. *To determine the Projections.*

DIVIDE the Semi-diameter of the Column at its Astragal (as is done above on the Capital) in 6 Parts, and give 3 to the Projection of the upper Fillet.

BUT if the Capital is of an undiminished Pilaster, (as on the Right-hand side of Plate II) then divide the Semi-diameter of the Pilaster (as above on the Capital) in 8 Parts, and give three to the Projection, as before.

NOTE. By the Scale of Projection, placed against the Neck of the Capital, you see that the whole Projection is divided in 3; the first 1, in 2; and the last 1 in 4; the half of the first 1 stops the Projection of the Fillets under the Astragal and Ovolo; and the 2 first of the 4, in the outer 1 third Part, stops the Ovolo and Fascia of the Abacus.

RULE II. *To divide the Heights, and determine the Projections of the Members contained in the Capital of a* Dorick *Column or Pilaster.* Plate XI.

I. *To divide the Heights of the Members.*

DIVIDE the Height in 3 Parts (as on the Left-side), divide the middle 1 in 3; of which the lower 1 divided in 3, give the upper 2 to the Astragal, and lower 1 to the Fillet. Divide the upper 3d Part in 3; give the lower 2 to the Fascia of the Abacus; and the upper 1 thereof divided in 3, give the upper 1 to the Fillet, and the lower 2 to the *Cima reversa.*

NOTE, The Height of the Astragal to the Shaft is found, as before, in the *Tuscan* Column, Page 11.

II. *To determine their Projection.*

DIVIDE the Semi-diameter of the Column at its Astragal (as above on the Capital) in 4; and give 2 to the Projection of the upper Fillet. But if the Capital is of an undiminished Pilaster, (as on the Right-hand side) then divide the Semi-diameter of the Pilaster (as above on the Capital) in 5 Parts, and give 2 to the Projection, as before.

BY the Scales of Projection on each Side of the Capital, you see, that the whole Projection is there divided in 4 Parts; from which, and their Sub-divisions, the several Members in the two Varieties of Capitals have their Projections determined.

The ancient Ionick *Capital, and its Volute explained.* Plate XXIII.

RULE I. To divide the Height of its Members, and describe its Volute.

I. *To divide the Height of its Members.*

DIVIDE the given Height as *k x*, in 11 Parts; give the upper 1 to the upper Fillet; the next 2 to the *Cima reversa*, which with the aforesaid Fillet makes the Abacus: give the next 1 to the List of the Volute; the next 3 to the Band of the Volute; and the remaining 4 to the Ovolo. This done, set down 8 of the above 11 Parts from *x* to I; give the first 2 to the Astragal; the next 1 to its Fillet; and the lower 5 to the Depth of the Volute. Divide *r s* on the Right-hand (which is equal to *k x*, or 20 Minutes, the Height of the Mouldings of the Capital) in 4 Parts, and turn down 1 Part to *d*; then *r d* will be equal to

to 25 Minutes, which is equal to the Semi-diameter of the Column at its Shaft. Now admitting *b v* to be the central Line of the Column, make *v c* equal to *r d*, and draw the Line *e c b*, which will be the upright of the Column. Make *b g* equal to two thirds of *a* 1, the Height of the Aſtragal; and from the Point *g* draw the Cathetus or Line *f g*, parallel to the central Line. Divide *g b* in 4 Parts; the firſt 1, ſtops the Aſtragal at *a*. Make *f n* equal to *f i*, which will terminate the Projection of the Abacus.

RULE II. *To deſcribe the* Ionick *Volute.* Plate XXIII.

FROM 1 Part below *x*, draw the Line *p m o* for the central Line of the Aſtragal, interſecting the Cathetus *i g* in *o*. On the Point *o*, with the Radius *o x*, deſcribe the Circle or Eye of the Volute (which is repreſented at large by the Figure R): wherein inſcribe the Geometrical Square, and draw its Diameters 2, 4; and 1, 3; divide each Semi diameter in 3 Parts, as at the Points 6.10; 5.9; 12.6; and 11.7: which are the Centers numbered in Order, on which the Outline of the Volute is deſcribed, *viz.* The Point 1 is the Center to the Arch *i m*; the Point 2, of the Arch *m g*; the Point 3, of the Arch *g p*, &c.

THE inward Line of the Liſt of the Volute is deſcribed on 12 other Centers, which are, at one Fifth of the Diſtance between the other 12 Centers, and which are ſignified by the ſmall Diviſions next within the 12 Centers in the Eye of the Volute at large, in Plate XII.

To gradually diminiſh the Liſt of this Volute, we muſt divide its Height or Breadth in 12 Parts, as expreſſed above, in Pl. XXII. and at every Quarter of its Rotation, abate its Breadth 1 of thoſe Parts, as expreſſed by the Numerical Figures affixed, which will cauſe it to terminate at the Eye in a Point.

NOTE, Fig. AB, Pl. XXIII. is a View of half a Side of the Capital, wherein B ſhews the thickneſs of the Volute, whoſe Height is equal to *i g* in the Front. The Heights of the other Parts, are ſhewn by the Scale of Parts on the Left; and is the ſame as the like Scale above.

NOTE, The Abacus to this Capital being ſquare, is therefore called by Workmen a *Trencher Capital*: and indeed very properly, becauſe the Word *Abacus* is derived from the Greek Word *Abax*, ſignifying a Square Trencher.

The modern Ionick *Capital explained.* Plate XXIV.

RULE. *To divide the Heights of the Members contained in its Abacus, and to determine their Projections.*

THIS Capital, though called Modern, was invented by VINCENT SCAMOZZI; and including its Volute, is preciſely half a Diameter in Height.

I. *To find the Heights of the Members.*

DIVIDE its Height in 3 Parts, and the upper half of the upper 1 in 4, as on the Left; of which give the upper 3 to the Ovolo; and the other one to the Fillet under it. Divide the lower 2 Parts and half in 8 Parts (as on the Right), give the upper 1 and half to the Faſcia of the Abacus; the next half to the Receſs under the Abacus; the next 2 to the Ovolo: the next 1 to the Aſtragal; and the next half to its Fillet.

II. *To*

II. *To find the Projectures of the Members*

DRAW the central Line of the Column *b g*; and in any Place, as at g draw the Line *a b* at right Angles to *b g*, and of length at pleasure. Make *g* and *g d*, each equal to the Semi-diameter *i k*; and divide it into 12 Parts, eac representing 5 Minutes (or 1-12th of a Diameter); make *c a* and *d b*, each equ to 15 Minutes or 1-fourth of a Diameter, which terminates the Projection the extreme Parts or returned Horns of the Abacus; as exhibited by the dotte parallel Lines drawn thence up to them.

AND from the Sub-divisions of the 2 outer 5 Minutes, the Projections of th other Parts of the Abacus are determined in the same manner; as also are th Projections of the Ovolo, Astragal, and Fillet, represented by dotted Lines withi the Volute.

THE Volute of this Capital is represented in Plate XXII. and is described th same as that of the ancient Capital; for though it appears to be elliptical whe seen in a direct View, as being thereby something foreshortened; yet it is circula as the other.

UNDER this Capital I have placed half its Plan, whose Construction be plainly exhibited by the dotted perpendicular Lines, proceeding from the Membe in the Elevation, needs no further Explanation.

The Corinthian *Capital explained.* Plate XLI.

THIS Capital was originally adorned with the Acanthus Leaves only; but some delight in Variety, I have therefore in Plate XI. given the Acanthus with th Olive, Laurel, and Parsley, to be employed at discretion.

THE Height of this Capital, was originally but 1 Diameter: but modern A chitects thinking it too short, they therefore added 10 Minutes, thereby maku its Height 70 Minutes. and giving it a much more magnificent Aspect than it h before.

BY the Measures affixed, which is no more than the Height divided in 7 Part of which the upper 1 is the Abacus; the Height of every Part is adjusted, a by the Plan and Elevation in Plate XLII. the Breadths and Distances of the Leav &c. are fully exemplified in the like manner.

IN the Drawing of this Capital, the young Student must first accustom hims to express only the Leaves in gross, as expressed in this and the XLIVth Plate, un he has made himself a Master of forming their Out-lines: when it will be a Pleasu to raffle them, as expressed in Plate XLIII. and XLV.

AND as the Capital of a Pilaster has all its Leaves in each Face in a direct Vie contrary to those of a Capital to a Column, and is one-sixth of a Diame more in Breadth; I have therefore, to explain the Difference and Parts, shewn Plate XLIV. the Plan and Elevation of a Capital to a Pilaster, in the same mann as that of a Column in Plate XLII. as indeed I have also the Elevation of a h Capital at large, with its Leaves raffled, as those of Plate XLIII.

The Composite *Capital explained.* Plate LVIII.

THIS Order is called *Composite*, because its Capital is composed of the *Ionick* nd *Corinthian* Capitals; that is, its Abacus, Volutes, Ovolo and Astragal between hem, are the very Members which form the modern *Ionick* Capital. Its two eights of Leaves are the very same as those in the *Corinthian* Capital; and e Stalks, which in the *Corinthian* Capital finish with Volutes and Helices, are re stopt by the *Ionick* Volutes, and made to finish inwardly with Husks on Tenels, called Caulicole's.

THE Height of this Capital is the same as that of the *Corinthian*, and is divided 7 Parts also, of which the upper 1 is the Height of the Abacus; and which ing divided in 2, and the upper 1 in 5; the upper 4 is the Height of the Ovolo, d the lower 2 of the Fillet. Divide the lower half of the Height of the Abacus ith the next 2 Parts into 8, and then finish the Volute exactly the same, as in e modern *Ionick* Capital. Plate XXIV.

Now, as the remaining Part of this Capital is entirely *Corinthian*, as before oved, it is needless to say more thereof; but that it may be fully exemplified, have therefore shewn its Elevation at large in Plates LIX. and LX. as well for a laster, as for a Column; as I have done before in the *Corinthian* Order.

CHAP. IV. *Of Entablatures.*

N Entablature is the uppermost or last principal Part of an Order, (which *Vitruvius* called *Ornament*) and consists of 3 Parts, *viz.* an Architrave, a Freeze Frize, and a Cornice.

THE Heights of Entablatures being declared in Chap. I. we are now to observe at their Projections are equal to their Heights, in all the Orders, excepting the *orick*, and that only but when its Mutules are introduced; when it then consists half the Entablature's whole Height.

THE Heights of the several Entablatures are thus divided into their Architraves, izes, Cornices, *&c.*

RULE I. *To divide the* Tuscan *Entablatures into its Architrave, Frize, Cornice,* :. Plate III.

First, DIVIDE the given Height into 7 Parts; give 2 to the Architrave, 2 to e Frize, and 3 to the Cornice.

Secondly DIVIDE the Height of the Architrave in 7 Parts; give 2 to the lower fcia, 4 to the upper Fascia, and 1 to the Tenia, whose Projection is equal its Height; and which being divided in three, give 1 to the Projection of the per Fascia.

Thirdly, DIVIDE the Height of the Cornice in 3; divide the upper 1 in 4; d give the upper 1 Part to the Regula, and the other three to the *Cima-recta*. Die the middle 1 in 6; give the upper 1 to the Fillet, and the other 5 to the rona. Divide the lower 1 in 2; give the upper 1 to the Ovolo; and the lower if divided in 4, give the upper 1 to the Fillet, and the other 3 to the Cavetto.

By

By the Scale of Projection is ſeen, that the Projection of the Corona, is tw thirds; the Ovolo, one third; and the Fillet of the Cavetto, one ſixth of t whole.

Note, by well underſtanding the manner of proportioning this Entablatu (which is very eaſy) the others following will become as eaſy: But that the you Student may not be at any ſtand therein, I will, for a further Explanation, e plain the Entablatures of the *Dorick* and *Ionick* Orders, in the ſame manner.

RULE II. *To divide the* Dorick *Entablature into its Architrave, Frize, Co nice*, &c. Plate XII.

Firſt, Divide the Height in 8 Parts; give 2 to the Architrave; 3 to t Frize, and 3 to the Cornice.

Secondly, Divide the upper 1 of the Architrave into 3, and give the upp 1 to the Tenia: Divide the lower 2, in 6; give the upper 1 to the Fillet over t Gutta's, and the next 3 to the Gutta's.

Divide the lower third Part of the Height of the Cornice in 3; and give t lower 1 to the Cap of the Triglyph. Divide the remaining Part of the Cornic Height in 4 Parts, and the upper 1 Part in 4; of which give the upper 1 to t Regula, or upper Fillet on the *Cima-recta*; and the lower 3 to the *Cima-rect* The next Part divided in 3, half the upper 1 is the Fillet; and the remainc the Corona. The next Part being alſo divided in 3, the upper 1 is the Ca ping of the Mutule, and the lower 2 the Mutule. Laſtly, the lower 4th Pa divided in 3, half the upper 1 is the Depth of the Ground to the Mutules; and h the lower 1, is the Fillet to the Ovolo of the Bed-mould.

The Projection of this Cornice (as before obſerved), is half the Height of t whole Entablature; and which being divided in 4, as on the *Cima-recta*, has t Projections of its Members determined, as by Inſpection is ſhewn.

Now it is to be noted, that the Breadth of a Triglyph is always equal half the Column's Diameter at its Baſe; that its Channellings and Gutta's a found by dividing the Breadth of the Triglyph into 12 Parts, as exhibited at lar in Plate XIII. That the Diſtances between the Triglyphs muſt always be equ to the Height of the Frize, and therefore will become exactly ſquare. Th theſe intervals or Squares are called Metopes; and are ſometimes enriched wi Roſes, as here expreſſed, or otherwiſe at the Pleaſure of the Architect; a that the manner of forming the Planceer of this Cornice is ſhewn in Pla XIV.

RULE III. *To divide the* Ionick *Entablatures into the Architrave, Frize, Co nice*, &c.

As this Order has two Varieties of Entablatures, *viz.* the one with Dentule and the other with Modilions: I have therefore ſhewn them both, and by explaini of one, the other will be underſtood.

To divide the Ionick *Entablature with Dentules.* Plate XXVIII.

Firſt, Divide the Height in 10 Parts, give 3 to the Architrave, 3 to t Frize, and 4 to the Cornice.

Second

Secondly, Divide the upper 1 Part of the Architrave in 4; give the upper 1 to the Fillet; the next 2, and 1 fourth of the lower 1 to the *Cima-reversa*; and the remaining 3 fourths of the lower 1 to the Bead. These Members together are called the Tenia of the Architrave, whose Fillet's Projection is equal to their whole Heights.

Thirdly, As the Frize of this Order is made swelling, therefore divide the Height in 4, and on the middle 2 make the Section *x*, on which describe the Curve of the Frize.

Fourthly, The Height of the Cornice being in 4 Parts, divide the upper 1 in 3; give the upper 1 to the Regula or Fillet on the *Cima-recta*, and the remaining 2, with 2 thirds of the lower 1 to the *Cima-recta*; and the 1 third, give to the Fillet on the *Cima-reversa*.

Divide the next Part in 4; give the upper 1 to the *Cima-recta*, and the other to the *Corona*.

Divide the next or 3d Part in 6; give the upper 3 to the Ovolo, the next 1 to its Fillet, and the next 1 to the Fillet between the Dentules.

Divide the lower 1 in 3, the upper 1 will terminate the Depth of the Dentules. Divide the middle 1 in 3, and the upper 1 will be the Depth of the Denticule or Fascia, on which the Dentules are fixed, and the Remains will be the *Cima-reversa*, and lower Member of the Entablature.

The Projection is divided into 4 principal Parts, as by the Scale against the Frize is shewn: by which its Members are terminated, as by Inspection is plain.

To divide the Ionick *Dentules.*

In an Entablature over a Column, Divide the Distance between the Central Line, and the Upright of the Shaft at its Neck, into 10 Parts; give 2 Parts to the Breadth of a Dentule, and 1 to an interval. But in an Entablature over an undiminished Pilaster, divide the aforesaid Distance into 12 Parts, and proceed as before.

Note, The Breadth of a Dentule is 5 Minutes, and of an Interval 2 Minutes and a half; which are described at large in Plate XXX.

Now, as the *Ionick* Entablature with Modilions, as expressed in Plate XXIX. has its Members proportioned in like manner, I therefore need only to note, That the Breadth of each Modilion is 10 Minutes; that the Distance or Interval between them, is 25 Minutes in an Entablature to a Column; and 30 Minutes in an Entablature to an undiminished Pilaster. And that the Curve of the Sophete of the *Ionick* Modilion, is described at large in Plate XXX. as following.

The Height and Projecture being before found,

Divide the Length in 6 Parts; and on the Point 5 erect the Perpendicular 5 *a* equal to 2 Parts and a half; also from the Point 2 let fall the Perpendicular 2 *b* equal to 1 Part and a Half, and draw the Line *a b*. On the Point 2, describe the Arch 1 *d*; on the Point *b*, the Arch *d c*; and on the Point *a*, the Arch *c* 5.

Note, The manner of forming the Return of the Planceer of this Cornice, is shewn in Plate XXXI.

RULE III. *To divide the* Corinthian *Entablature into its Architrave, Frize a Cornice.* Plate XLVI.

1. DIVIDE the Height into 10 Parts; give 3 to the Architrave, 3 to t Frize, and 4 to the Cornice.

2. DIVIDE the Height of the Architrave, and of the Cornice, each in 5 Part and ſub-divide them as exhibited; and then proceed in every reſpect as in the pr ceding Orders.

Note, THAT though the Dentules are expreſſed in this Cornice, yet they are n always uſed.

THAT the Breadth of the Modilions are 10 Minutes, as before in the *Ionick*, b their Diſtances are greater.

THE Interval between Modilions in a Cornice over Columns is 25 Minutes; ar in a Cornice over undiminiſhed Pilaſters, 30 Minutes.

TO render the Parts of this Modilion plain and intelligible, I have ſhewn at large in Front and Profile, with its Meaſures, in Plate XLVII. wherein Fi A repreſents the Eye of its Volute at large, with the Centers numbered; c which its Curves are deſcribed in the very ſame manner, as the Volute of th *Ionic* Capital.

BETWEEN the Modilions the Planceer of the Sophete of the Corona is er riched with Roſes in hollow Pannels, called Coffers, as expreſſed in Pla XLVIII. which alſo ſhews the manner of returning the Sophete at an extern Angle.

RULE IV. *To divide the* Compoſite *Entablature into its Architrave, Frize, an Cornice.* Plate LXI.

First, DIVIDE the Height into 10 Parts; give 3 to the Architrave, 3 to th Frize, and 4 to the Cornice.

Secondly, DIVIDE the Heights of the Architrave and of the Cornice, each int 4; ſubdivide their parts, draw in and terminate their Members by the Scale c Projection, as before done in the preceding Orders. The Manner of enrichin the Planceer of the Corona of this Cornice, and returning it at an external Angl is exhibited in Plate LXII.

CHAP. IV. *Of Doors, Windows, Portico's, Arcades, and the Intercolumniatio of Columns in general.*

THAT the young Student may have pleaſure in the proceſs of his Study, I hav given him an Example of a Door ſquare and circular headed, with circular an pitched Pediments, a Window, a Portico, and an Arcade, with their Impoſts an Architraves, in each of the firſt 4 Orders; which immediately follow their reſpec tive Entablatures; and which having their principal Parts determined by thei Meaſures affixed, needs no other Explanation. And in order to further enable hin in the art of Deſigning, I have ſhewn the proper Intercolumniations, or juſt Diſ tances, that the Columns of every Order muſt be placed from each other, whe employed in Colonnades, *&c.* by which he may form new Deſigns at his Pleaſure See Plates VI. XVII. XXXIV. XXXV. and LIII.

CHAP

HAP. V. *Of Pediments, and the Manner of finding their Raking and returned Mouldings for their Cornices, and for Capping of their raking Mutules and Modilions.*

PEDIMENTS, which the *French* call *Frontons*, from the *Latin Frons*, the Forehead, are commonly placed over Windows, Doors, Portico's, *&c.* to carry off the Rains, and to enrich the Order on which they are placed.

PEDIMENTS are either entire, or open; and those are ſtraight, circular, compound, *&c.*

AN entire ſtraight Pediment is generally called a pitch'd Pediment; as the lower Pediment in Plate LXIX. And an entire circular Pediment is generally called a compaſs Pediment, as the upper Pediment in Plate LXIX.

WHEN a Pediment conſiſts of more than one Arch, as thoſe in Plate LXXI. and LXXII. they are called entire compound Pediments.

OPEN Pediments are thoſe, whoſe raking Members are ſtopt in ſome certain place between the points of their Spring, and their Faſtigium or vertical Point; as those in Plate LXIII. the lower Pediment in Plate LXXI. and the upper, in Plate LXXIV.

ENTIRE Pediments are the firſt Kind that were made, and were originally placed to Portico's at the Entrances into Temples; but now we place them to Frontiſpieces of Doors, Windows, *&c.* for Ornament and Uſe.

As the entire Pediment by its reclining Surfaces carries off and diſcharges the Rains at its Extremes, therefore none but entire Pediments ſhould be employed abroad; whilſt the broken or open are employed for Ornament only within ſide, where no Rains can come.

'TIS true, we may daily ſee open Pediments placed without ſide, as is done by *Inigo Jones* at *Shafts bury* Houſe in *Alderſgate-ſtreet, London*. But, ſurely, nothing can be ſo abſurd, (unleſs 'tis the placing of an entire Pediment within ſide a Building, where no Rains can fall; as done by Mr. *Gibbs*, within the Church of *St. Mary le Strand*) becauſe, by their being open, they receive the Rains, and diſcharge them in Front, as a ſtraight and level Cornice doth; and therefore of no more uſe.

As Pediments, when well applied, are very great Enrichments to Buildings, and in many caſes are very uſeful, I have therefore given 14 Varieties for the young Student's Practice, with their Meaſures affixed; by which they may be drawn and worked of any Magnitude required. *Vide* Plates LXIX. *&c.*

IN the working of Pediments, the chief difficulty is, to form the Curves of the Raking and returned Cornices, that ſhall exactly accadeer, or meet at their Mitres: which may be truly worked, as following.

RULE. *To deſcribe the Curve of the Raking Cima-recta of a Pediment, having the Curve of the ſtraight or level Cornice given.* Plate LXV.

LET *a b g* be the given *Cima-recta*; divide its Curve in 4 equal Parts at the points *d e f*, and draw the Ordinates *i f k e*, and alſo *g d*; from the Points *l e f*, draw the raking Lines *f q*, *e r*, *d x*; and the perpendicular Lines *d k*, *e l*;

el; *f m*. In any Place, as at *n o*, draw a right Line at right Angles to th Raking Lines; and making the Ordinates in Fig. B, as *w q*, *n r*, *t s*, equal t the Ordinates *i f*, *k e*, *g d*, in Fig. A. through the Points *q r s*, trace the Curv *p q r s n*; which is the Curve of the Raking *Cima-recta* required. And tho ſtrictly ſpeaking, each half is a Part of an Ellipſis; yet if Centers be foun that ſhall deſcribe the Arch of a Circle to paſs through the three Points *p q r* and *rs n*, it will not be in the power of the moſt inquiſitive Eye to diſcover th Difference.

To deſcribe the Curve of the returned Cornice.

FROM *p* Fig. C, ſet back *p o* the Projection *b g* in Fig. A, and draw th perpendicular *o n*, on top of the Fillet *p o*; make the Diſtances *p t*, *t w*, *w w*, equa to the Diſtances *b k*, *k l*, *l m*, in Fig. A; and drawing the Lines *w x*, *w r*, *t g* parallel to the perpendicular *o n*, they will cut the Raking Lines in the Point *q r s x*. From the Point *p*, through the ſaid Points to *n*, trace the Curve *p q r s x* which is the Curve of the Returned *Cima-recta*, as required; for its Ordinates a thoſe Points, are equal to the Ordinates in Figure A.

BY the ſame Rule, the Curves of the Raking and Returned Ovolo's, Plate LXVI the Raking and Returned Cavetto's, Plate LXVII. and the Raking and Returned *Cima-reverſa*; for the Capping of Raking Mutules and Modilions, Pl. LXVIII. are found, as is evident to the firſt View.

CHAP. VI. *Of Block and Cantaliver Cornices, Ruſtick Quoins, Cornices and Coves, proportioned to Rooms of any Height, Angle-Brackets, Mouldings for Tabernacle Frames, Pannels and Centering for Groins.*

I. OF Block Cornices I have given 3 Varieties in Plate LXXV. where I have firſt ſhewn them in ſmall, to expreſs the Breadth of their Block-Truſſes, and Diſtances at which they are to ſtand; as likewiſe the manner of applying them over Ruſtick Quoins; and ſecondly at large, the better to expreſs the Diviſion of their Members.

II. IN Plate LXXIX. I have given an Example of a Cantaliver Cornice at large, which in lofty Rooms under a Cove, has a very grand and noble Effect. The Breadth of a Cantaliver, is one 4th of its Height, which is equal to the Height of the Freeze, and the Diſtance they are placed at, is the ſame as their Height; thereby making their Metops exactly a geometrical Square, as in the *Dorick* Order.

III. COVES to Ceilings are of various Heights; as one third, one fourth, one fifth, one ſixth, two ſevenths, two ninths, &c. of the whole Height.

A Cove of one third, as Fig. A. Plate LXXXI. is beſt for a lofty Room; and when Windows are made therein, the Groins make a very agreeable Figure, and take off the ſeeming Heavineſs, which an entire Cove of a large Height impoſe on the Eye.

THE Curve of this Cove *x b* is a Quadrant of a Circle deſcribed on the Center *e*; as alſo is the Curve *a c* of the ſame Radius, deſcribed on the Center *b*. To find

ind the Center *b*, after having ſet out the Diſtances of the Columns at 9 Diameters nd a half, and deſcribed the Cove *x b*, as aforeſaid; make *d b* equal to *a d*.

A Cove of one fourth, as Fig. A. Plate LXXIX. is alſo fit for a lofty Room, s a Hall, Saloon, *&c.* which is thus proportioned: Divide the Height in 20 Parts; give 5 to the Cove, and 2 to the Entablature.

To deſcribe an Angle-Bracket for any Cove, ſuppoſe for Fig. B.

LET *a b c* be a Front Bracket, and *a f* the Baſe over which the Angle-Bracket, s to ſtand. In C draw Ordinates from its Curve to its Baſe *a n*, at any Diſtances, nd continue them till they meet *a f* the Baſe of the Angle-Bracket, from whence raiſe Ordinates at right Angles to the ſaid Baſe, and making them reſpectively equal o thoſe in Figure C; through their Extremes trace the Curve *a n e*, which is one Quarter of an Ellipſis, and the Curve of the Angle-Bracket required.

A Cove of one 5th, as Fig. I. Plate LXXIX. is fit for a Room of State, and thus proportioned, *viz.* Divide the Height in 5; give one to the Cove, and one third of the next to the Cornice, which is *Dorick* without Mutules, and repreſented at large by Fig. H.

A Cove of one 6th, as the two Coves in Plate LXXX. is fit for Dining Rooms, *&c.* and is thus proportioned. Divide the Height in 30 Parts; give 5 to the Cove, and 1 to the Cornice.

A Cove of two 7ths, as Fig. B, Plate LXXXI. is fit for a Study or Bed-Chamber, and even for a Hall; as he ein expreſſed, and is thus proportioned: Divide the Height in 7; give 2 to the Cove, and 1 to the Entablature, which is *Dorick*.

IV. IN Plate LXXVI. I have ſhewn how to proportion the *Tuſcan, Dorick, Ionick, &c.* Cornices to the Height of any Room: a Work known, or at leaſt practiſed but by few.

I. *To proportion the* Tuſcan *Cornice to a Room of any Height.*

DIVIDE the Height, from the Floor or Dado, in 5, and the upper 1 in 5; of which give 3 to the Height of the Cornice, and 2 to the Breadth of its Stile and Height of its Rail, Fig. A.

II. *To proportion the* Dorick *Cornice to a Room of any Height, Fig.* B.

DIVIDE the Height in 4, and the upper 1 in 10; of which give 3 to the Height of the Cornice, and 2 to the Breadth of its Stile and Height of its Rail.

III. *To proportion the* Ionick, Corinthian, *or* Compoſite *Cornices to the Height of any Room, Fig.* C.

DIVIDE the Height in 3, and the upper one in 5; of which give the upper 1 to the Height of the Cornice, and 3-5ths of the next 1 to the Height of the Rail, and to the Breadth of the Stile.

V. IN Plate LXXVII. I have given eight different Mouldings for Pannels; and in Plate LXXVIII. four different Mouldings for Tabernacle-Frames, with proper Enrichments, and their Meaſures affixed; by which they may be drawn and worked, of any Magnitude required.

VI. IN Plate LXXXII. I have ſhewn the manner of finding the Curves, of the neceſſary Ribs for Groins, by one general Rule, as follows.

In Fig. A, let *a b c d* be the Plan, and the Semi-circle *a c b* an End Rib, *c f* its Height. Draw the Diagonal *a d*, as alſo the Ordinates 1 2 3 4, on the Sem circle Rib, which continue till they meet the Diagonal, in the Points 5 6 7 from whence raiſe right Lines perpendicular to *a d*, reſpectively equal to Ordinates 1 2 3 4; and then tracing the Curve through their Extremes, it will the Curve for the Diagonal Rib, as required.

By the ſame Rule, the Ribs for all other kinds of regular or irregular Groins, found, be their Plans what they will, and their Arches ſemi-circular, ſem elliptical, or Scheme; as is evident, by Figures B C D E and F; which a lit Inſpection will make evident to the meaneſt Capacity.

CHAP. VII. *Of Truſs'd Partitions, Truſs'd Girders, Naked Flooring, &c.*

I. In Plate LXXXIII. are three Varieties of Truſs'd Partitions, of 40, 50, a 60 Feet bearing, for Graineries, Warehouſes, *&c.* wherein great Weights a laid; of which the middle one is for two Stories Height.

II. In Plate LXXXIV. the Figures A B C, repreſent three Varieties of Truſs Girders; which ought not to exceed 25 or 30 Feet in Length; and Figure D is Girder cut Camber which for Lengths from 15 to 20 Feet, will do without bei Truſs'd, as the preceding.

The Scantlings of Girders ſhould be

	Feet.		Feet.		Inches.		
Lengths from	12, 15, 18, 21, 24, 27	to	15, 18, 21, 24, 27, 30	to be	10, 11, 12, 13, 14, 15	by	8, 9, 10, 11, 12, 13

Note, That Girders ſhould have at leaſt 9 Inches bearing in the Walls, and b bedded on Lintels, laid in Loam, with Arches turned over their Ends, that they ma be renewed at any time without Damage to the Pier.

III. In the upper Part of this Plate, I have ſhewn 3 Bays of Joiſts, or nake Flooring; wherein the two outer ones have only their binding Joiſts expreſs'd; an that in the middle with their Bridging Joiſts, (or Furring Joiſts) as called by ſome In this kind of Flooring 'tis to be noted, that binding Joiſts are ſo framed as tha their under Surface be level with the under Surface of the Girder, and the upper Sur face of their Bridgings with the upper Surface of the Girder.

The Diſtance of binding Joiſts ſhould not exceed 3 Feet and a half, or 4 Feet, i the clear; and their Scantlings ſhould be as follow, *viz.*

	Feet.		Inches.		
If their Length be	8, 10, 12	Their Scantling ſhould be	6, 7, 8	by	5, 5, 5 Inches.

Bridging

Bridging Joists should be laid at 1 Foot in the clear, and their Scantlings should be 3 by 4; 3 and a half by 4, or 4 by 4, &c.

In common Flooring, where neither Binding or Bridging Joists are used, the Scantlings of Joists ought to be as follows, *viz.*

	Feet.				
If the Length be	10	Their Scantling to be	7	by	3
	11		8		3
	12		9		3

Note, No Joists to exceed 12 Feet in Length; to have at least six Inches Bearing, and that on a Lintel or Bond-Timber; and their Distance in the clear not to exceed one Foot. 'Tis also to be observed, that all Joists on the Breasts and Backs of Chimneys, be framed into Trimming Joists (whose Scantlings are to be the same as those of Binding Joists), at 6 or 8 Inches Distance behind, and 12, 16, &c. Inches before, as *a a*.

CHAP. VIII. *Of Roofs.*

THE Requisites to Roofing, is the Scarfing and completing of Raisings, or Wall-Plates, &c. to determine the necessary Height of the Pitch, agreeable to the Covering; to find the Lengths of Principal and Hip-Rafters, and to Back them when necessary; to contrive the proper Trusses for to strengthen the Principal Rafters; and to lay out in Ledgement the several Skirts; thereby to determine the Quantity of Materials necessary; and to find the several Angles and Lengths of all Parts; so as to set out Work, and fix at once, the whole in a Workman-like manner, and in the least time.

Now in order to make the young Student a Master herein, I have shewn,

I. In Plate LXXXV. By Figures C D E F G H I K L M ten different Manners of Scarfing together the Raisings of Roofs; which is the first Work to be done; and then the Beams being cogged down thereon at their proper Distances, which should never exceed 10 Feet in the clear; we may begin to consider, and work the Superstructure to be raised thereon.

The first thing to be considered is the Height of the Pitch, which must be determined according to the Covering; which, if with plain Tile or Slate, the true Pitch, as Fig. A, will be proper: But if with Pan-tiles or Lead, it may be much lower. But here, for Example's sake, we will suppose a Roof to be true Pitch, whose Plan is *r v t h*, Fig. B, and whose Breadth we will suppose is equal to *g* 4, Fig. A.

To find the Length of a principal Rafter.

Divide *g* 4, in 4 Parts; on *g* and 4 with the Radius of 3 Parts, make the Section *h*; then draw the Lines *g h*, and *h* 4; and each is the Length of a principal Rafter required.

To find the Length of the Hip-Rafters.

Draw the Central Line *o a*, and the Diagonals or Bases, over which the Hip-Rafters are to stand; as *r a*, *t a*, *a v*, and *a h*; make *a t*, *a h*, and *a r*, in Fig.

Fig. A. equal to *a t*, *a b*, and *a r*, in Fig. B, and draw the Lines *b t*, *b b*, and *b r*; then *b r* is the Length of the Hip Rafter *r p*; *b b* is the Length of the Hip *g b*; and *q v* and *b t* is the Length of the Hip *t s*.

Or otherwise, on the End of the Diagonal *r a*, raise the Perpendicular *a q* equal in Height to *b a* in Fig. A, and draw the Line *r p*, which is the Length of that Hip, and equal to *b r*, in Fig. A, as before. By the same Rule you may find the Lengths of all the other 3 Hips.

To find the Angle of the Back of any Hip-Rafter.

Through any Point of its Base, as *c* in Fig. B, draw a right Line at right Angles, as *f b*, cutting the Outlines of the Plan in *f* and *b*. From the Point *c*, let fall a Perpendicular, as *c d*, on the Hip *g b*; and make *c e* equal to *c d*. Draw the Lines *f e*, and *b e*, and the Angle *b e f*, is the Angle of the Back required.

To lay out a Roof in Ledgement. Plate LXXXVI.

Let *b i d c*, be a given Plan; *a b*, Fig. B, the given Pitch; and *b g*, *b e*, a Pair of principal Rafters agreeable thereto.

By the preceding, draw the Ridge-Line *a a*, and the Diagonals *a d*, *a c* and *a b*, *a i*. In Fig. B, make *a c*, *a d*, and *a b*, equal to the Diagonals *a d*, *a c*, and *a b*, *a i*, in Fig. A. Through the Points *a a* in Fig. A, draw the two Beams *q k*, and *e* 4. Make *r q*, *f e*; and *k l*, 4 *m*, each equal to the Length of a principal Rafter, as *b g*, Fig. B; and draw the Lines *d s*, *s r*, *r b*, and *i l*, *l m*, *m c*. On the Points B and *i*, in Fig. A, with the Radius *b b* (the Length of the Hip) make the Section *t*, and draw the Lines *b t* and *t i*.

On the Point *d*, in Figure B, with the Length *b d* in Fig. B, and on *c* with the Length *b c*, make the Section *o*; then drawing the Lines *d o* and *c o*, the Skirts of the whole Roof is laid; which fill up with small and Jack Rafters at pleasure.

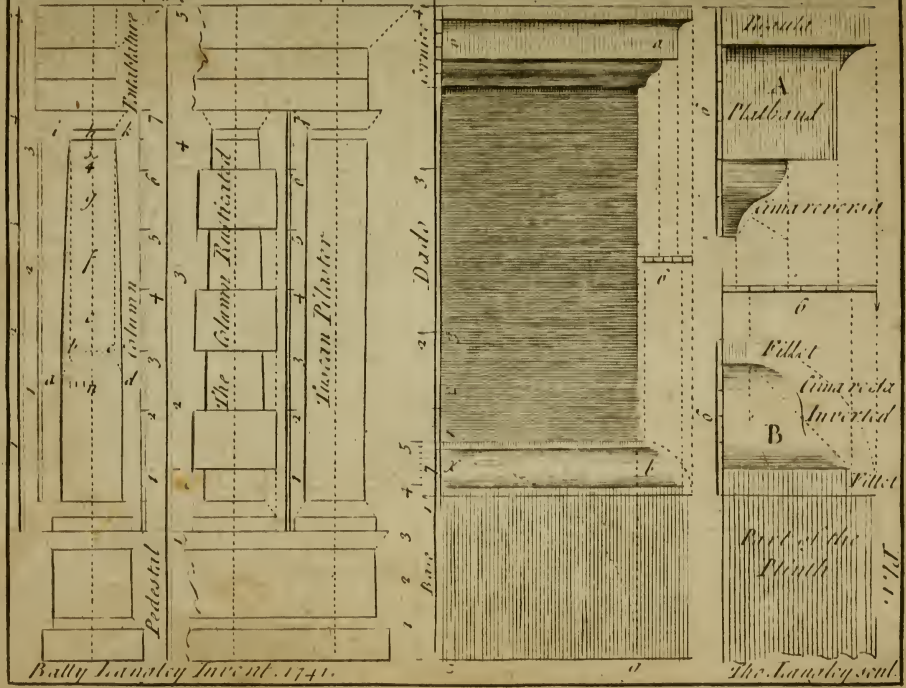
Now when the Skirts of a Roof are thus drawn on Paper, and are cut out round at their Extremes, and be truly bent or turned up on the Outlines of the Raising, as *b i*, *b d*, *d c*, and *c i*; they will all come truly together, and become a Model of the Roof required, wherein every Rafter may be expressed in its Place, and the just Lengths and Quantity known to a very great exactness.

By the same Rule, the irregular Roof, Pl. LXXXVII. is laid out in Ledgement, and its Requisites found, as is evident at the first view.

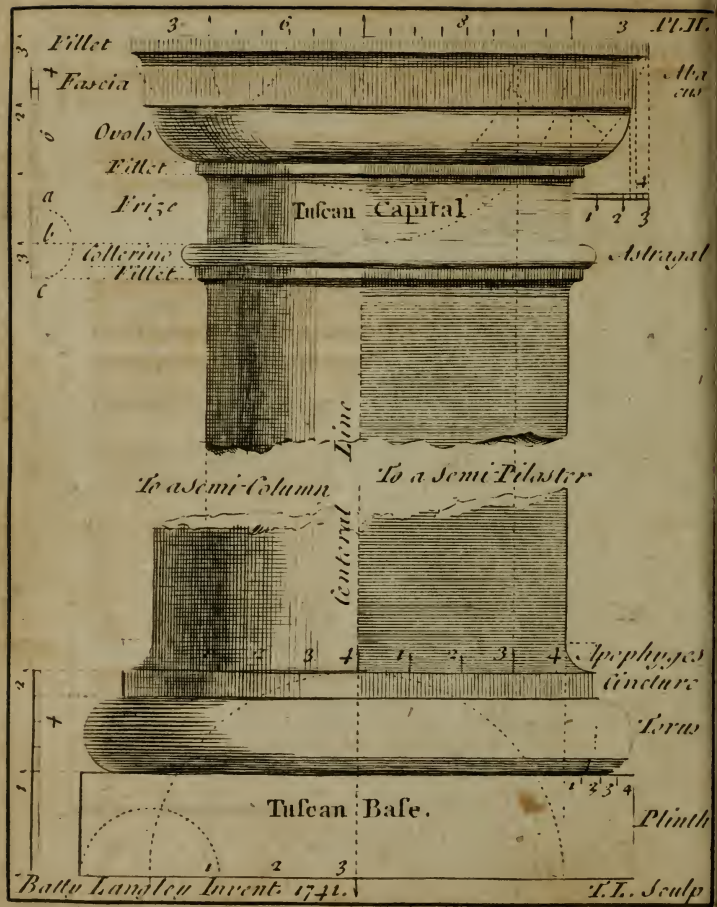
Note, As this Plan hath not parallel Sides, every Pair of Rafters will therefore be of different Lengths, although the Height of their Pitch is the same, and so consequently every Rafter must be backed by taking away a Triangle, as *a e b*, Fig. D, and then the Sole of the Foot of a Rafter will be as *c a d b*.

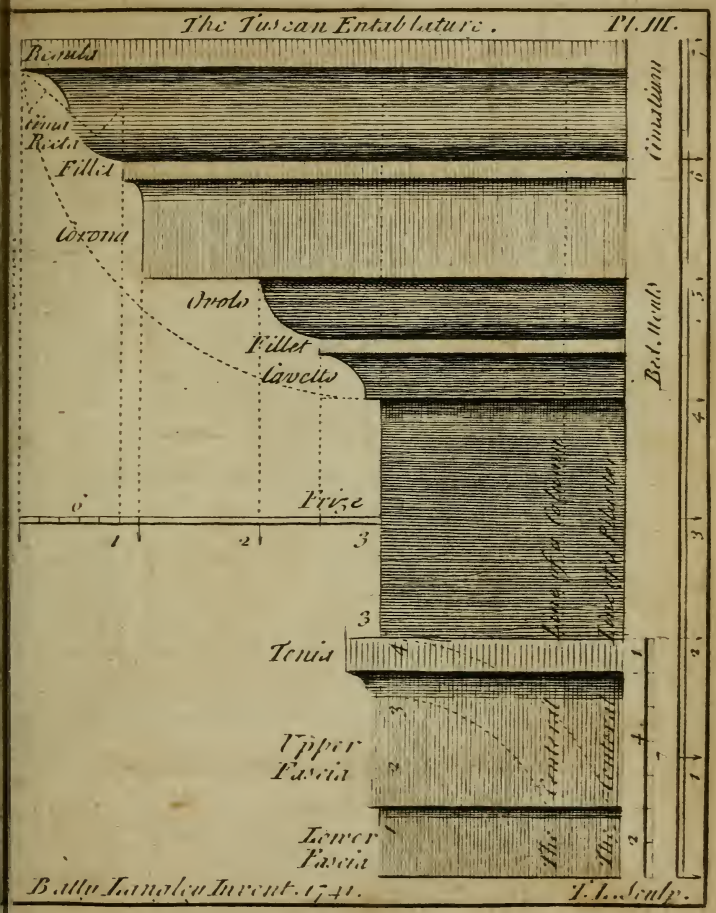
The following Plates consisting wholly of Trusses for Roofs and Domes, need no Explanation more than their own Figures express, to which I refer.

FINIS.


The Division of ye several Parts of ye Tuscan Order with ye Pedestal & its Parts at Large.
Entablature
Column
Pedestal
The Glowe Rustickd
Tuscan Pilaster
Cornice
Dado
Base
Plinth
A
Flatband
Cima reversd
Fillet
Cima recta
Inverted
B
Fillet
Rock of the Plinth
Bally Langley Invent. 1741.
The Langley sculp.

Dentil
Cornice
Crown


Pl. II.
Fillet
Fascia
Ovolo
Fillet
Frize
Tuscan Capital
Astragal
Collerino
Fillet
Line
To a Semi-Column
To a Semi-Pilaster
Centered
Apophyges
Cincture
Torus
Tuscan Base.
Plinth
Batty Langley Invent. 1741.
T.T. Sculp


The Tuscan Entablature.
Pl. III.
Cymatium
Bed Mould
Corona
Ovolo
Fillet
Cavetto
Frize
Tenia
Upper Fascia
Lower Fascia
Bat. Langley Invent. 1741.
J. L. Sculp.

Tuscan Doors.
Plate 4.
Diameters
9
8
7
6
5
4
3
2
1
1 Pace
1/2
1 D.
1/2
4 Diam.
1/2
1 D.
1/2
6 Diam.

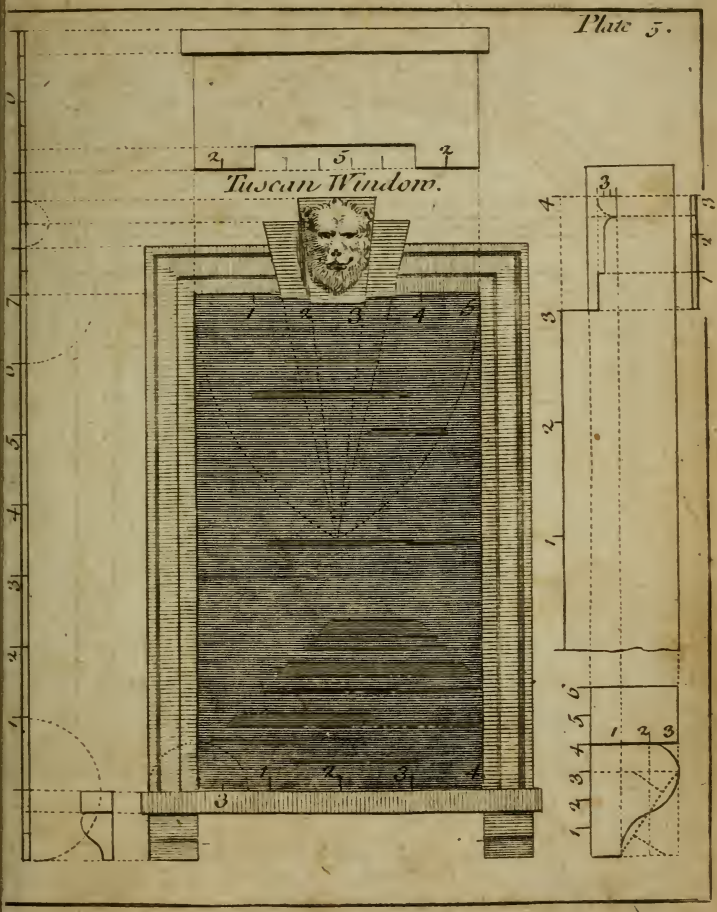
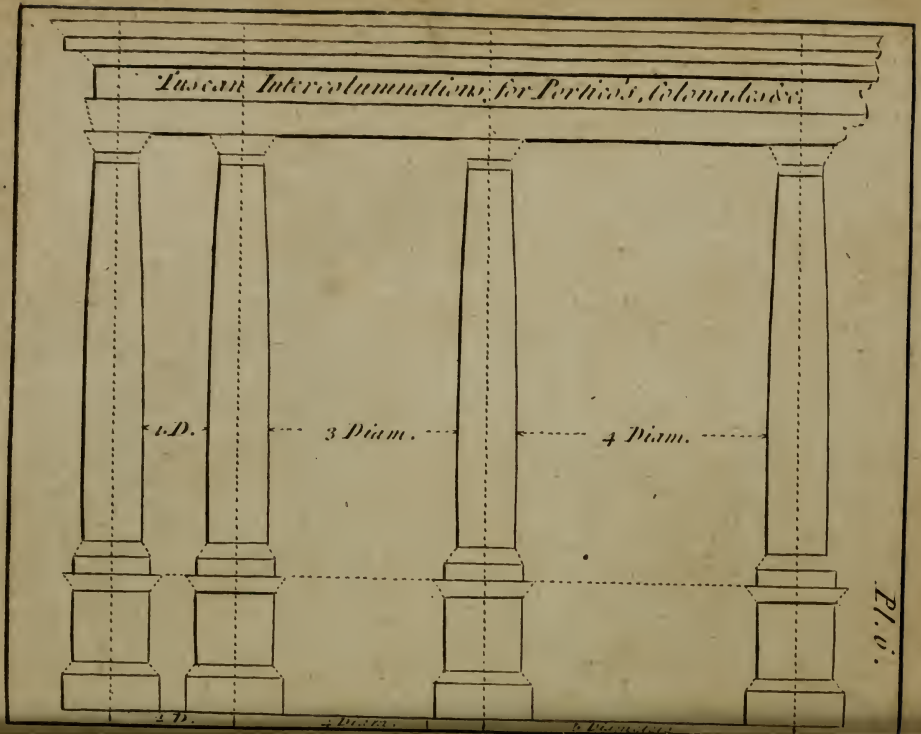


Plate 5.
Tuscan Window.

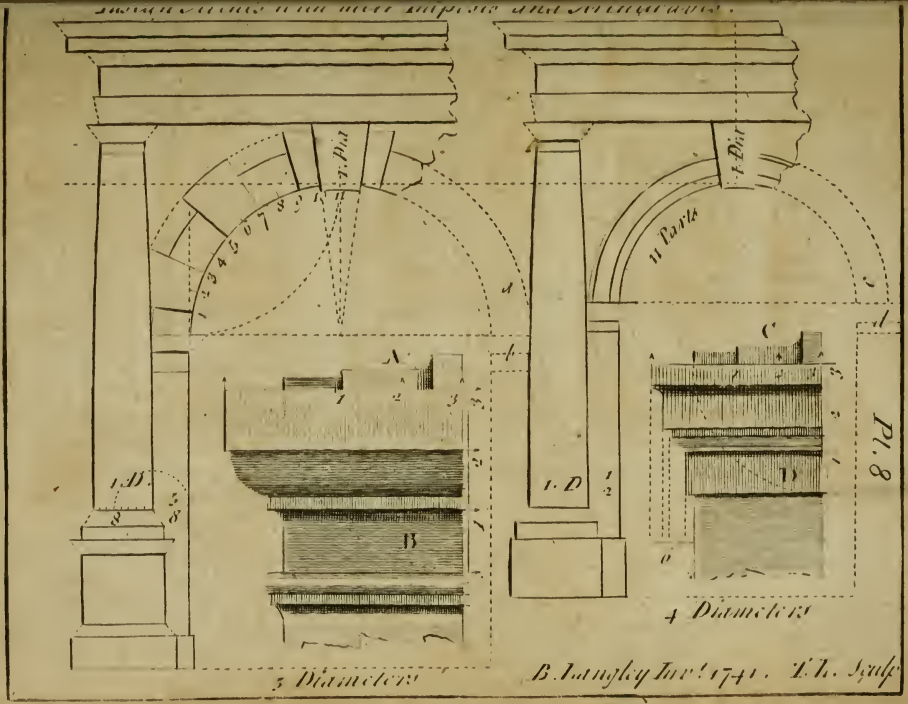

Tuscan Intercolumniations for Porticos, Colonades &c.
1 D.
3 Diam.
4 Diam.
2 D.
2 Diam.
6 Diameters

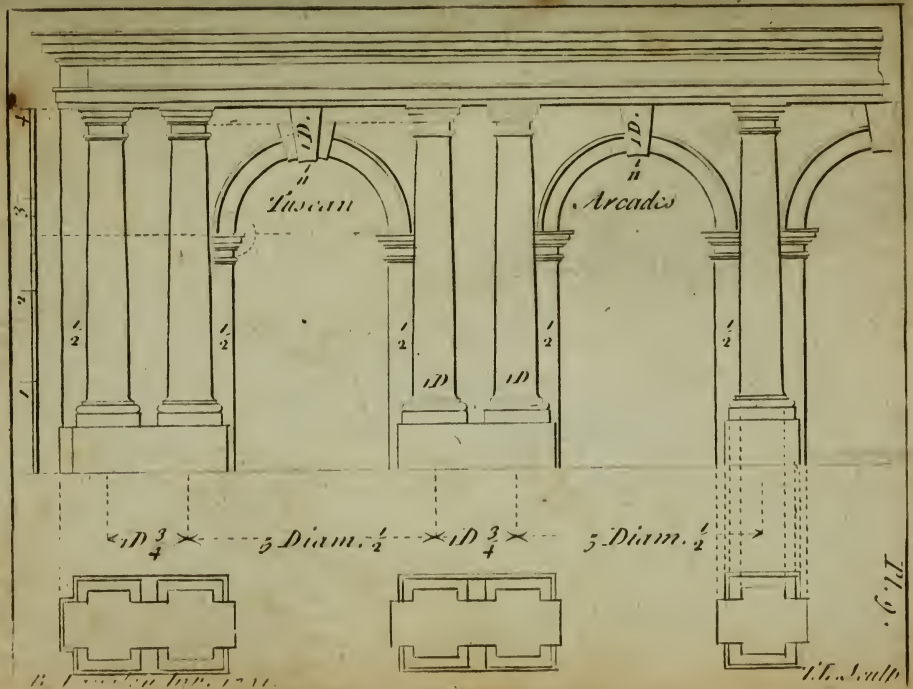
Pl. 6.

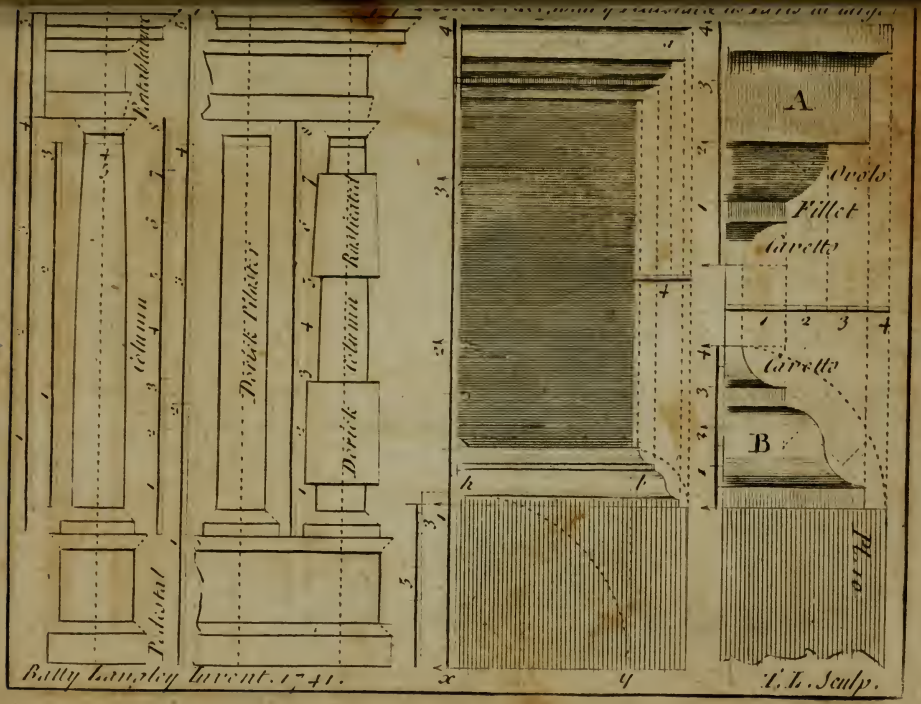
Pl. 7.

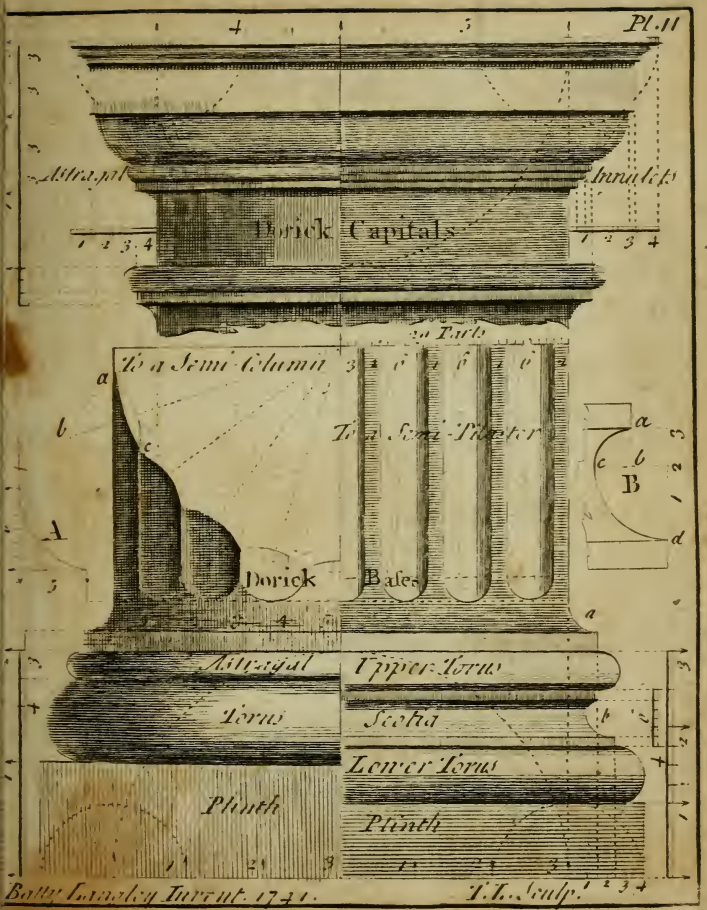
Thos. Lundy sc.

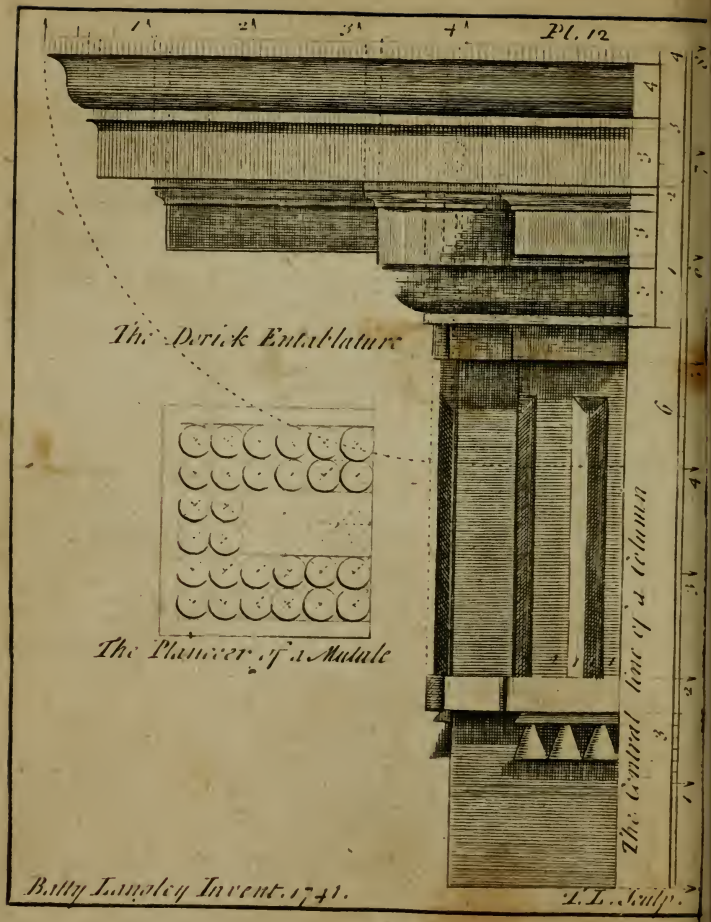
B. Lundy Lith. 17.


1. Dia
1. Dia
11 Parts
A
B
C
D
1. D
1. D
5 Diameters
4 Diameters
B. Langley Inv.t 1741. T. L. Sculp.
Pl. 8

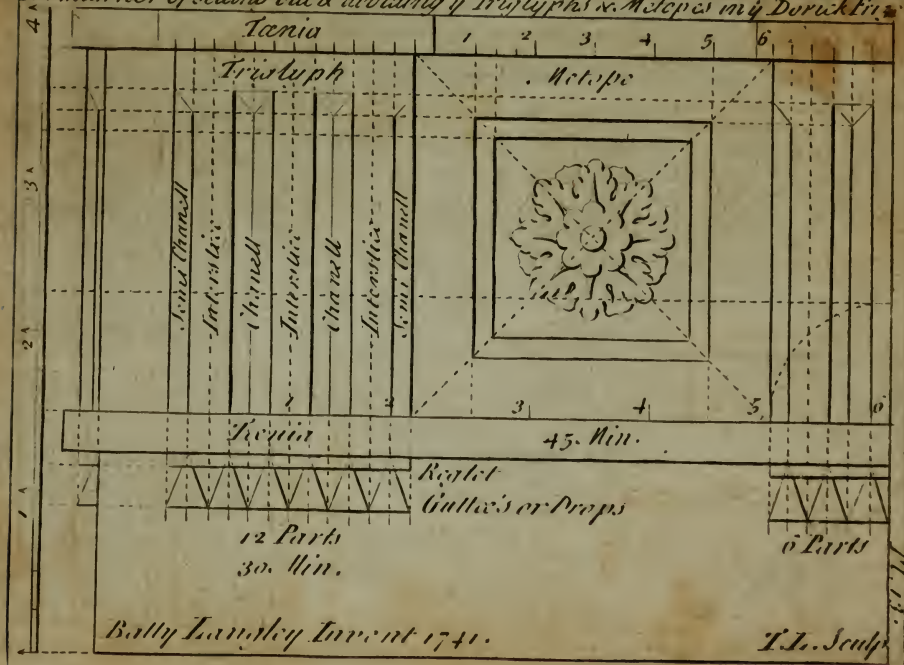

Tuscan
Arcades
1D.
1/2 D.
1D 3/4
3 Diam. 1/2
1D 3/4
3 Diam. 1/2
Pl. 9.

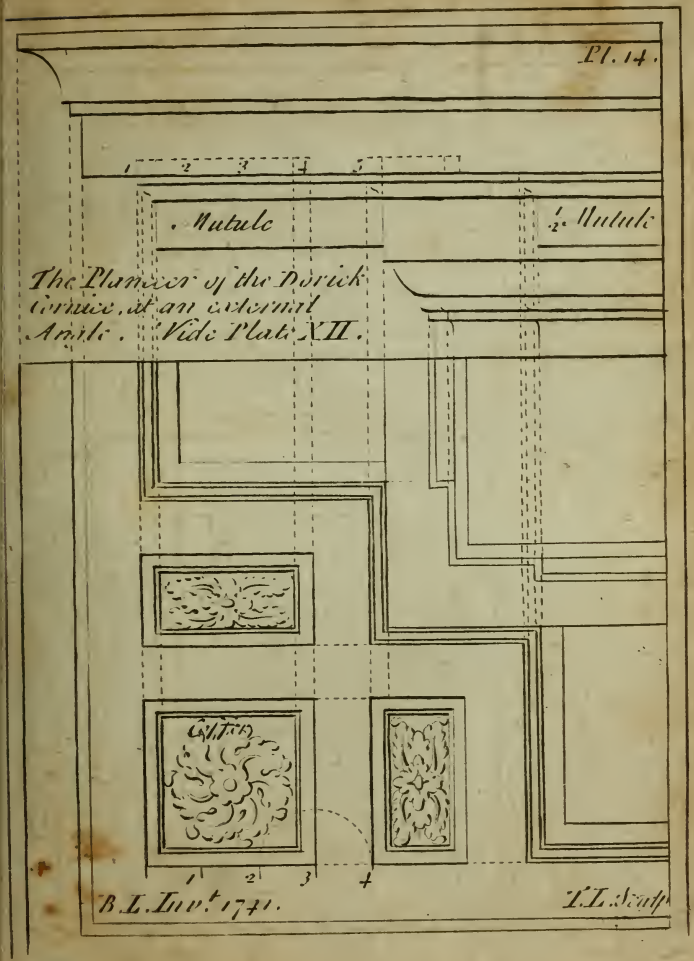

Entablature
Column
Pedestal
Doric Pilaster
Entablature
Doric Column
A
Ovolo
Fillet
Cavetto
Cavetto
B
Plan
h
f
x
y
Batty Langley Invent. 1741.
T. L. Sculp.


Pl. 11
Astragal
Annulets
Dorick Capitals
Tora Semi-Column
Tora Semi-Pilaster
Dorick Bases
A
B
Astragal
Torus
Plinth
Upper Torus
Scotia
Lower Torus
Plinth
Batty Langley Invent. 1741.
T. L. Sculp.


Pl. 12
The Doric Entablature
The Plan of a Module
The Central line of a Column
Batty Langley Invent. 1741.
T. L. Sculp.

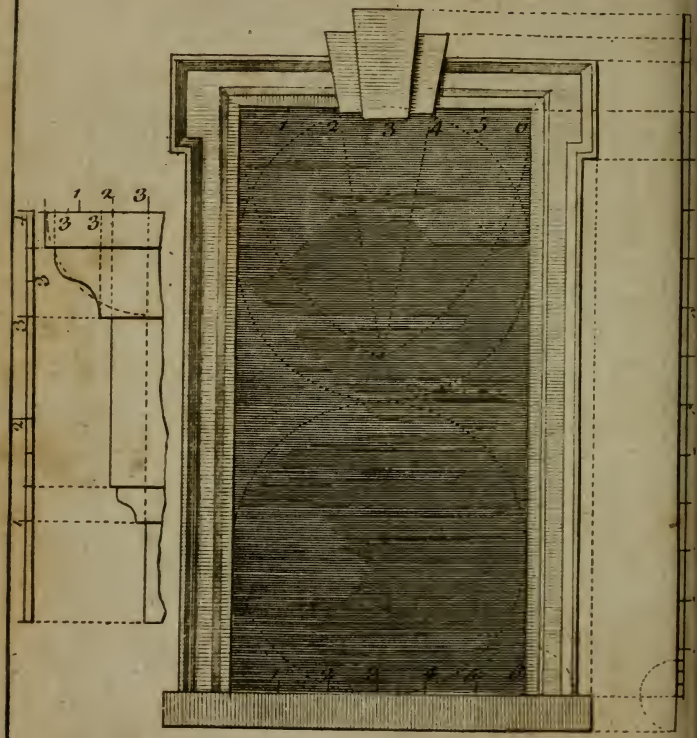
The manner of setting out & dividing ye Triglyphs & Metopes in ye Dorick Fri:




Pl. 14.
1 2 3 4 5
Mutule
½ Mutule
The Plancier of the Dorick Cornice, at an external Angle. Vide Plate XII.
1 2 3 4
B. L. Inv.t 1741.
T. L. Sculp.

11 Parts
3/8
1 D.
3/8
2 Diam. 1/4
2 Diam. 1/8
1/2
1 D.
1/2
6 Diameters 1/4

Dorick Window. *Plate n*

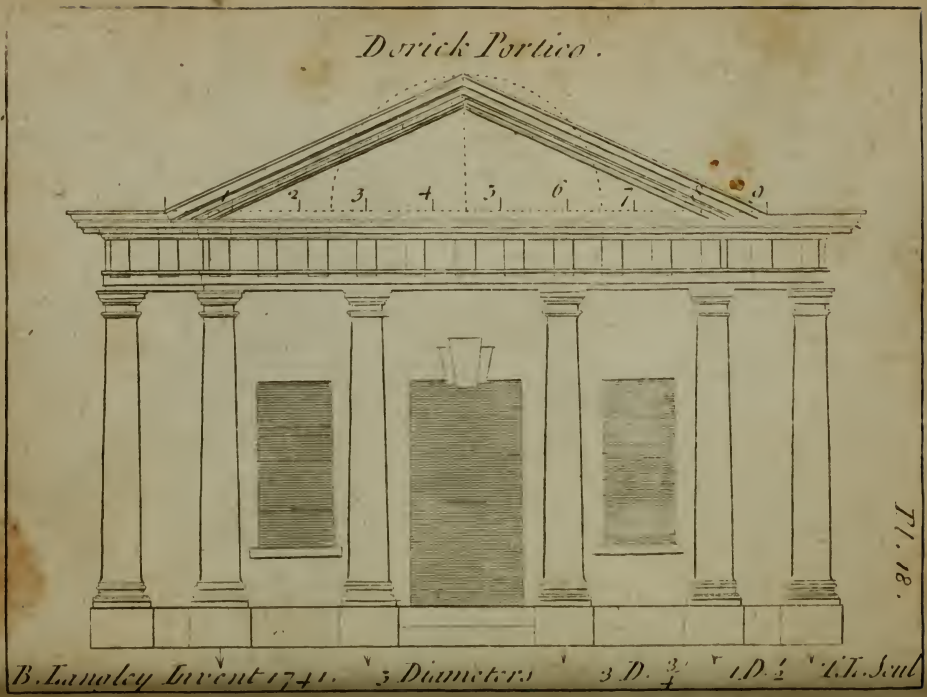


Pl. 17.

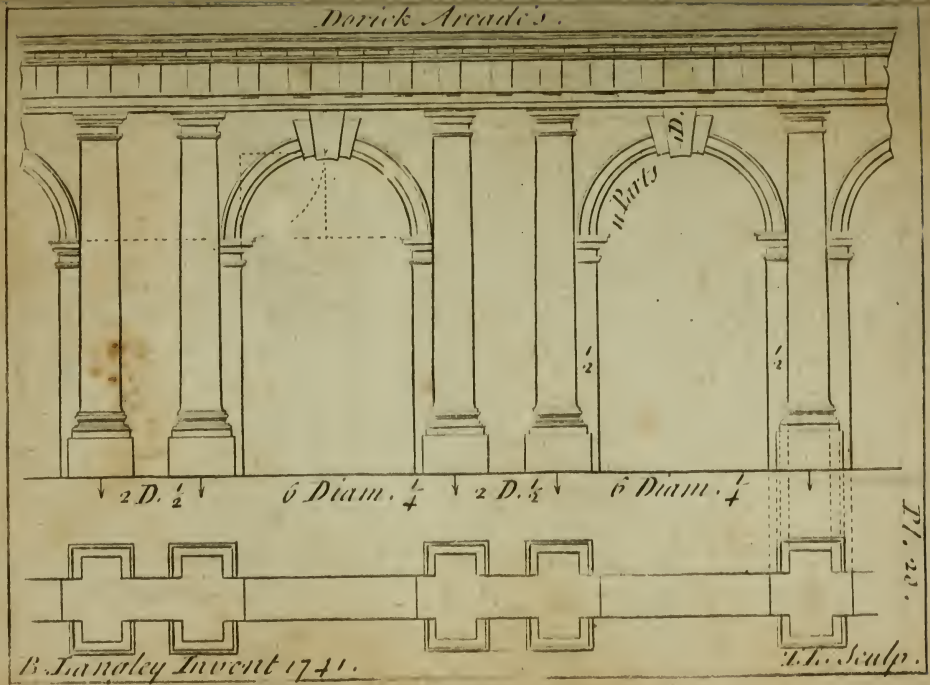
G. L. Invent 1741.

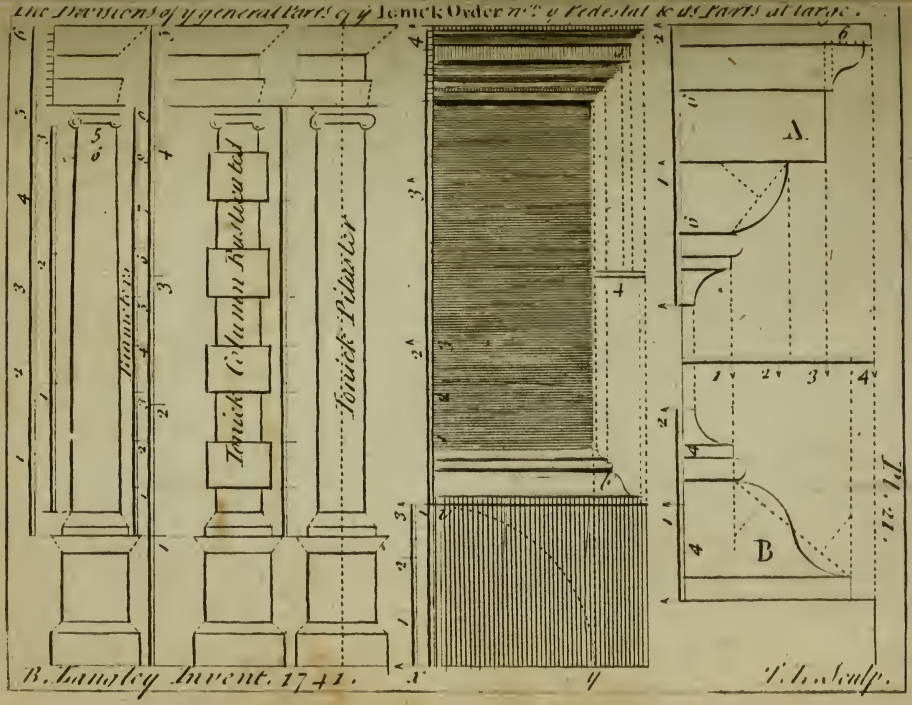
T. L. sculp.

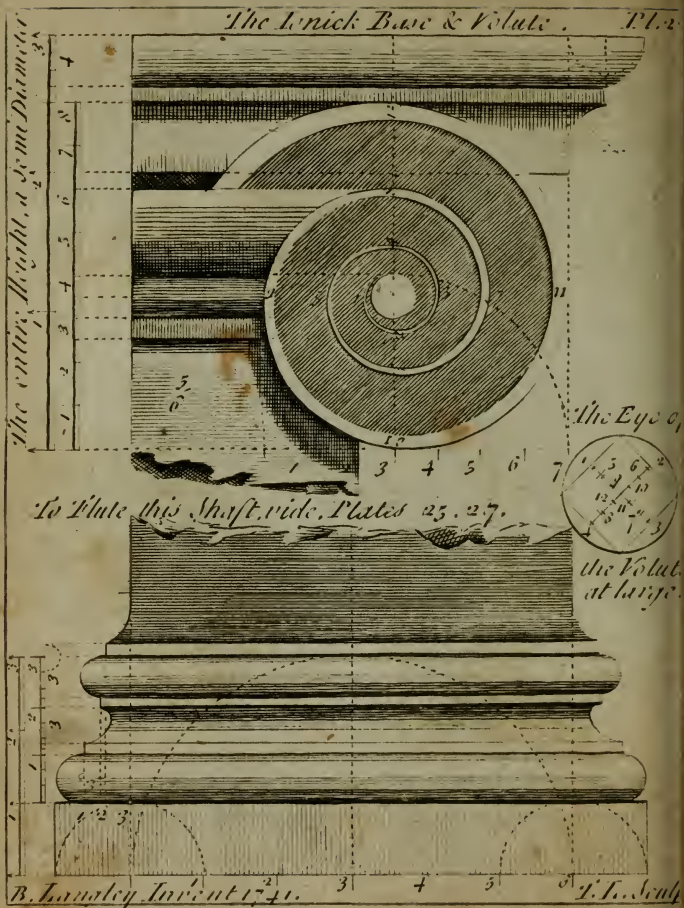
B 3

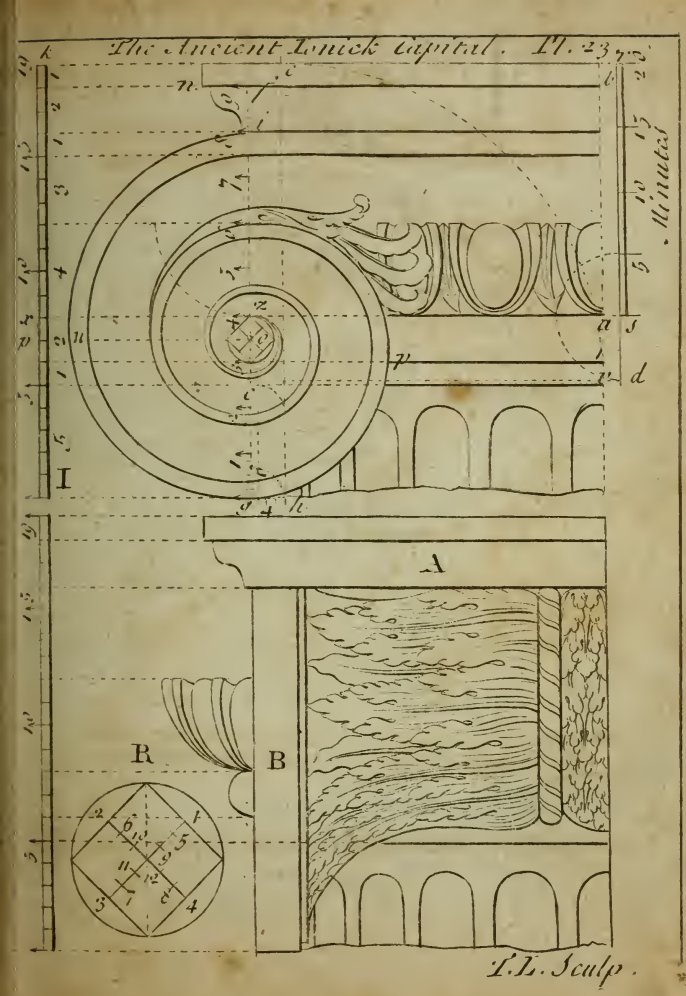

Dorick Portico.
1
2
3
4
5
6
7
8
9
Pl. 18.
B. Langley Invent 1741.
3 Diameters
3 D. 3/4
1 D. 1/2
T. T. Scul.

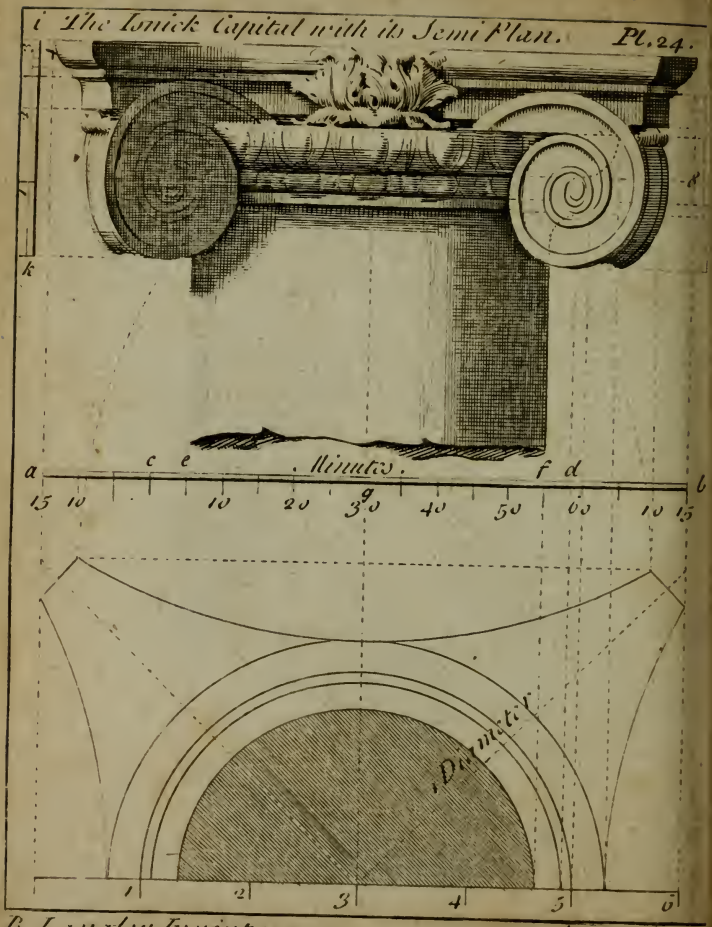
30
45
30
45
9 Parts
9 Diam.
a
b
A
4
3
2
1
45 Min.
1D.
30
30
45
30
11 Parts
1 Diam.
c
D
C
30
D
30 Min.
4 Diam. 1/4
1D.
Pl. 19.
B. Langley Inv.t 1741. T.L. Sculp.


Dorick Arcade's.
11 Parts
D.
1/2
1/2
2 D. 1/2
6 Diam. 1/4
2 D. 1/2
6 Diam. 1/4
Pl. 20.
B. Langley Invent 1741.
T.T. Sculp.


The Divisions of y general Parts of y Ionick Order w.th y Pedestal & its Parts at large.
Ionick Column Fluted
Ionick Pilaster
A.
B
B. Langley Invent. 1741.
T. L. Sculp.
Pl. 21.

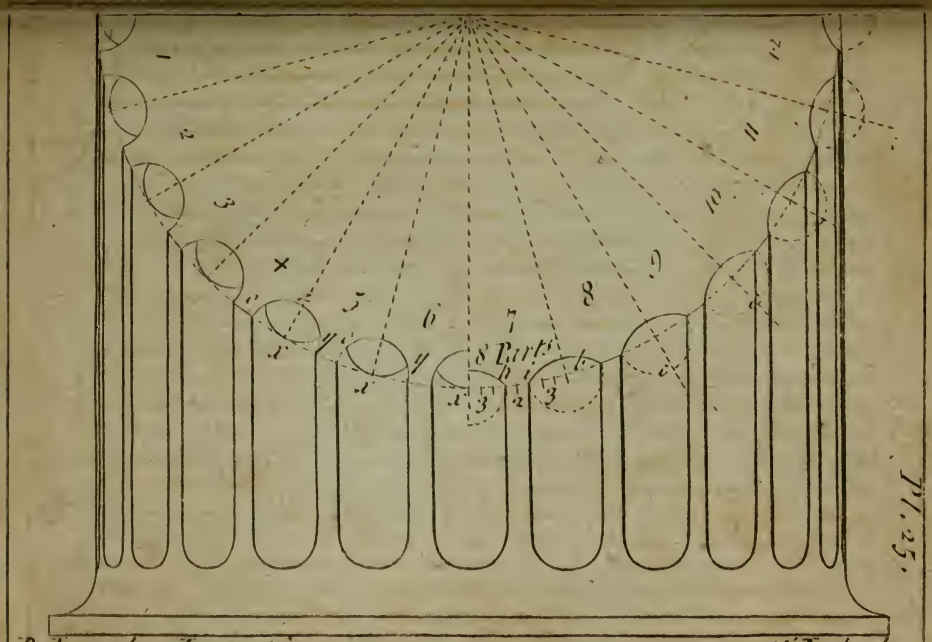

The Ionick Base & Volute. Pl. 2
The entire Height, a Semi Diameter
To Flute this Shaft, vide Plates 25. 27.
The Eye of
the Volute at large
B. Langley Invent 1741.
J. T. Sculp


The Ancient Ionick Capital. Pl. 23
Minutes
I
A
B
R
T.L. Sculp.



R. Langley Invent 1741.

Tho: L. Sculp



Pl. 25.

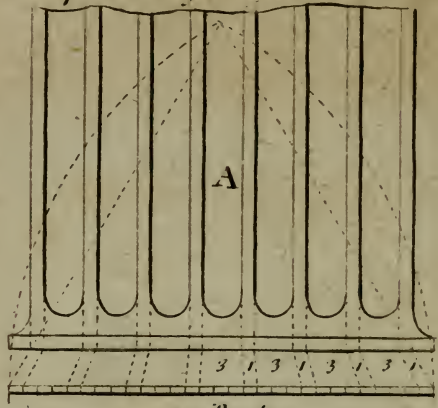
The manner of transferring the Flutes & Fillets on the Shaft of a Column —

Plate 26.

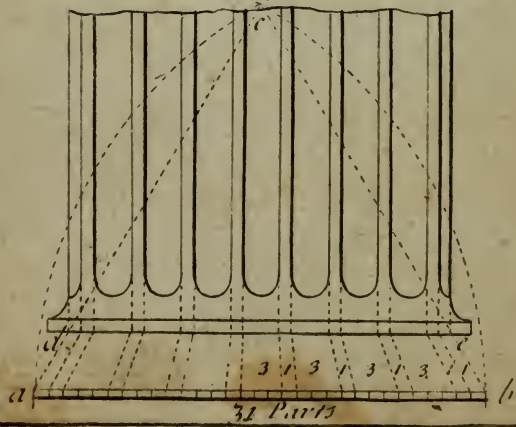
Divide a given length, less than the Circumference in 24 pts. each part in 4 then 1 is a Fillet. & 3 is a Flute —

The Manner of Dividing, the Flutes & Fillets of Pilas

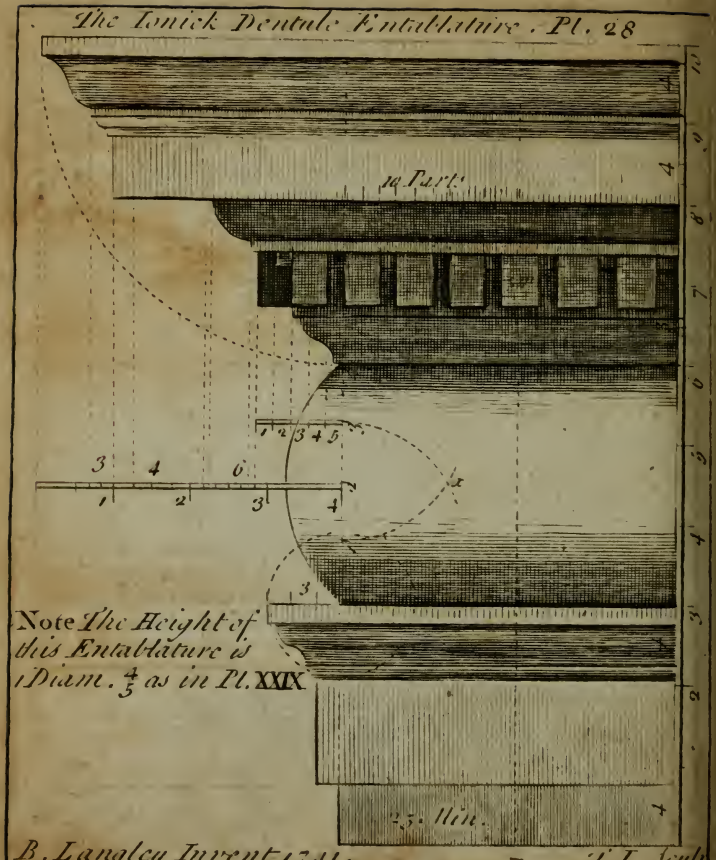
Plate 27.



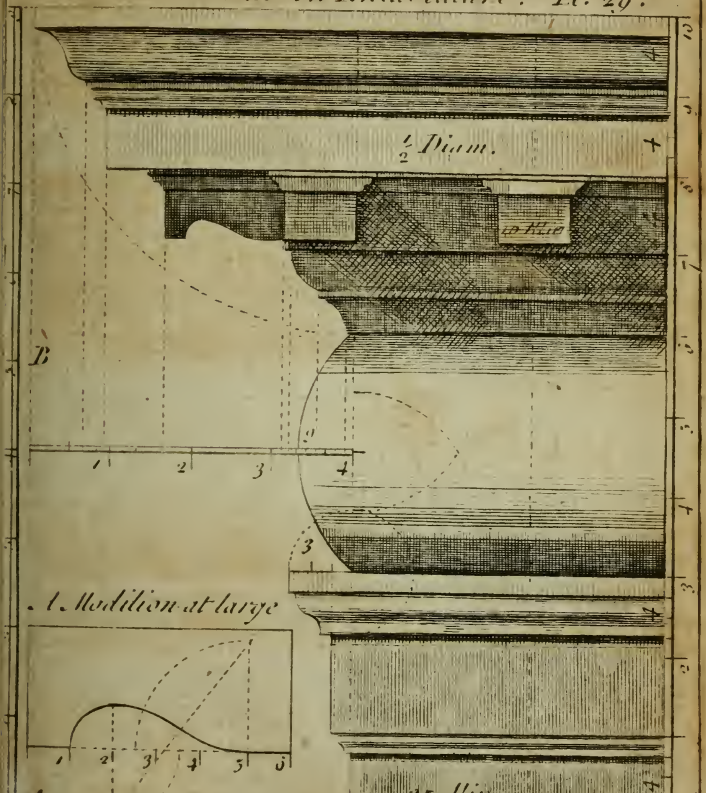
29 Parts



31 Parts


The Ionick Dentule Entablature. Pl. 28
10 Part.
1 2 3 4 5
3 4 6
1 2 3 4
3
Note The Height of this Entablature is 1 Diam. 4/5 as in Pl. XXIX
25. Min.
B. Langley Invent 1741.
T. T. Sculp.

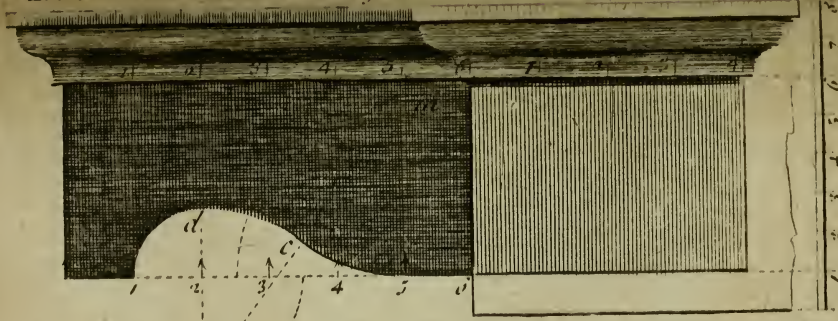
The Ionick Modilion Entablature. Pl. 29.



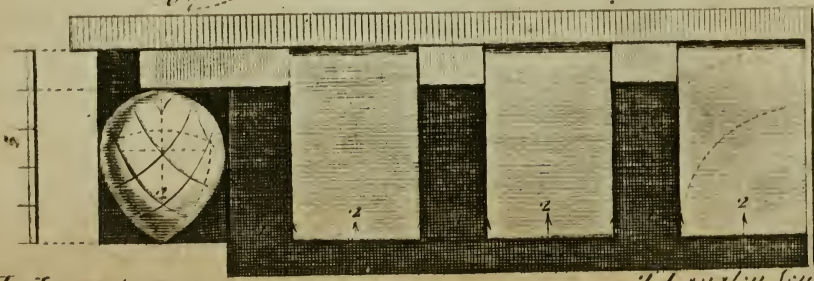
Note. Five ninths of the Entablatures Height as B A. is equal to the Diam. of the Column. B.L. Invent 1741. T.L. Sculp

Plate 30.

Ionick Modillion at large.

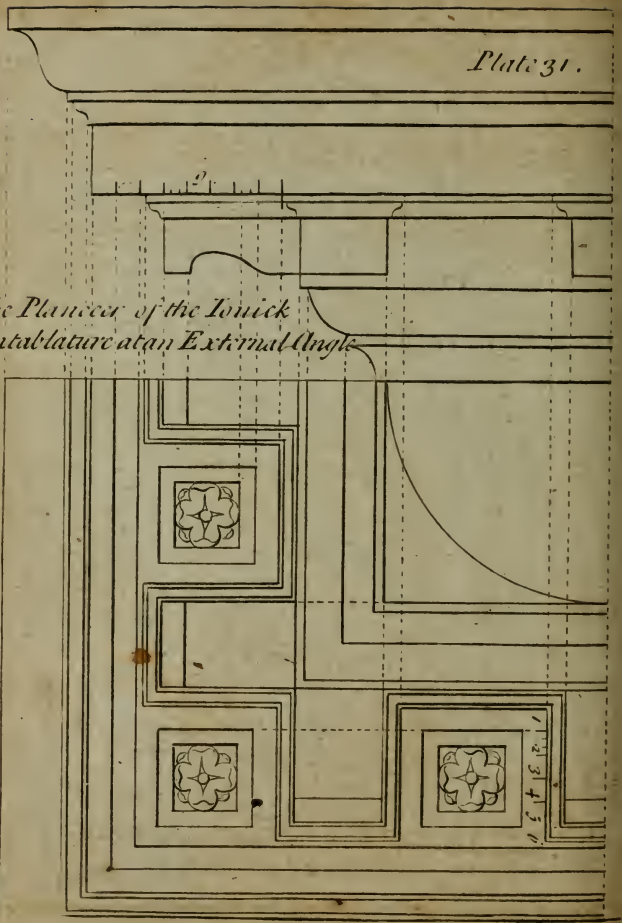


Ionick Dentules at large.



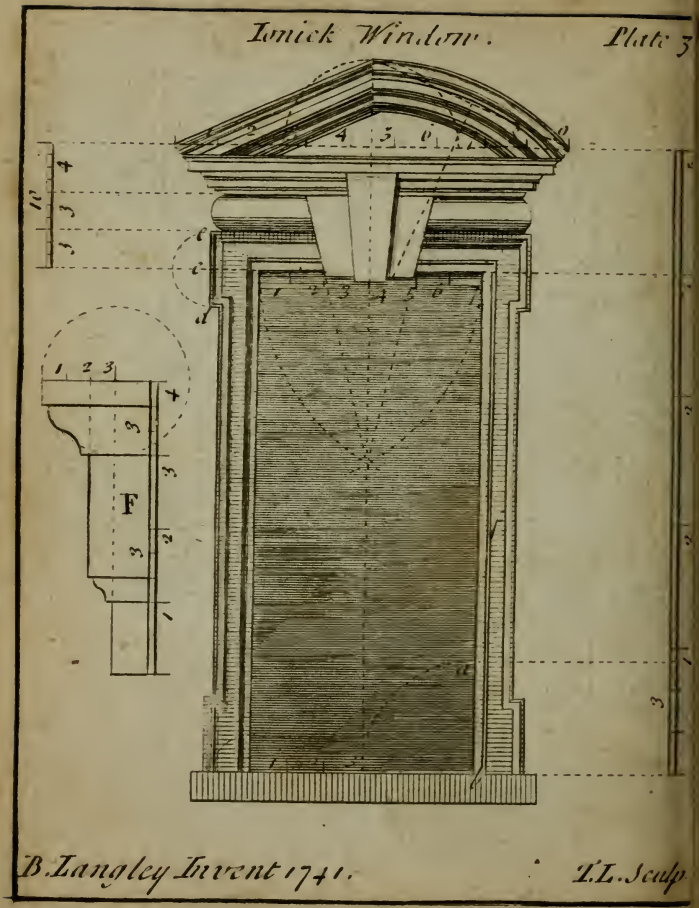
B. L. Invent 1741.

T. Langley Sculp.



The Plancier of the Ionick Entablature at an External Angle

2
3
4
6
Diameters
B.L. Invt.
1740.
T.L. Sculp
3 Diam 1/4
3 Diam

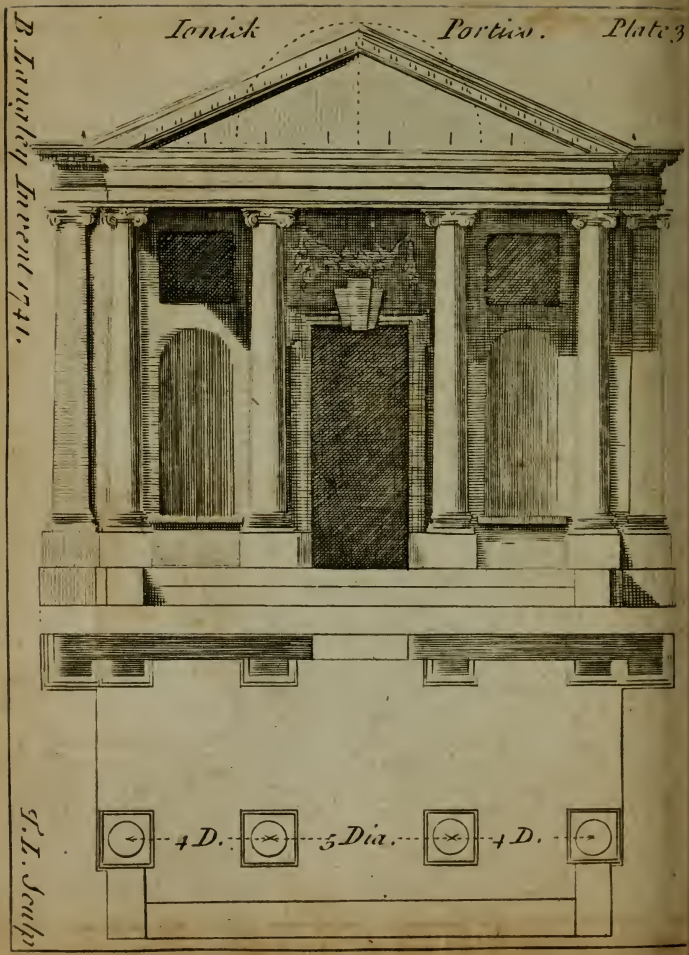

Ionick Window.
Plate 3
F
B. Langley Invent 1741.
T.L. Sculp

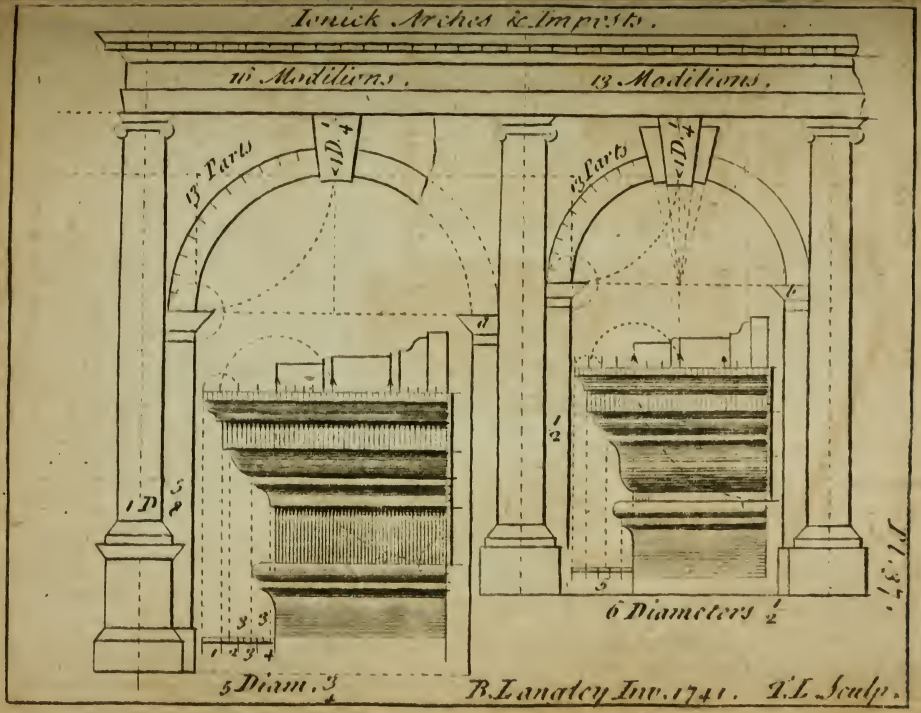
2. Mod
3. Mod
4. Modil.
5. Modil.
6. Modillions
Continued Pedestal
P. I. Inv. 1741.
1 D. ½
2 Diam
2 D. ½
3 D.
3 Diam ½
T. L. Sculp.

Pl. 34.

12 Dens. 16 Dent. 20 Dent. 25 Dentules
Divide each Semidiameter in 12 give 2 a Dentule & 1 to an Interval.
1 D. ½
2 Diam.
2 Diam. ½
3 Diameters
B. Langley
Sum. 1741.
T. L. Sculp.

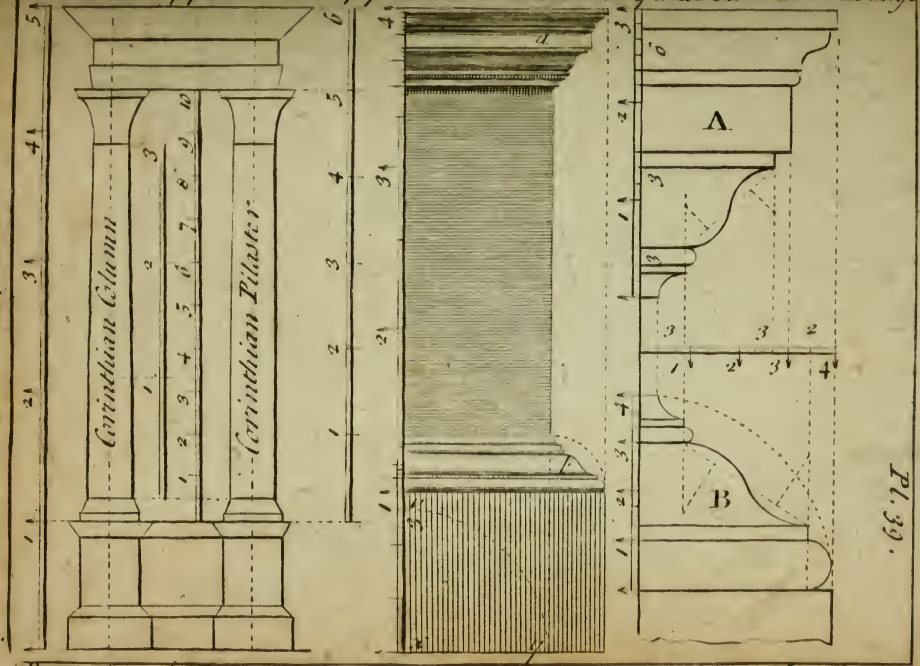
Pl. 35.


Ionick Portico. Plate 3
B. Langley Invent 1741.
T. L. Sculp
4 D.
5 Dia.
4 D.


Ionick Arches & Impsts.
10 Modilions.
13 Modilions.
13 Parts
13 Parts
1 D 4
1 D 4
1 D 5/8
1/2
5 Diam. 3/4
6 Diameters 1/2
Pl. 37.
B. Langley Inv. 1741. T. L. Sculp.

Ionick Arcades.
1 D.
1
2
3
4
5
6
7
8
9
10
6 Diam.
1 D. ½
6 Diam.
1 D. ½
Plate 35.

The Divisions of ye Gen. Parts of ye Corinthian Order with ye Pedestal & its Platbands



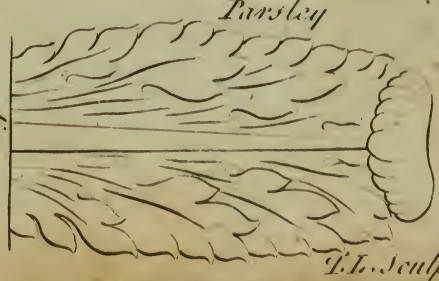
Pl. 39.

Wm. Pamelia Invent. 1771.

T. T. Sculp.

The ornament [illegible] it [illegible] for the [illegible] at [illegible]

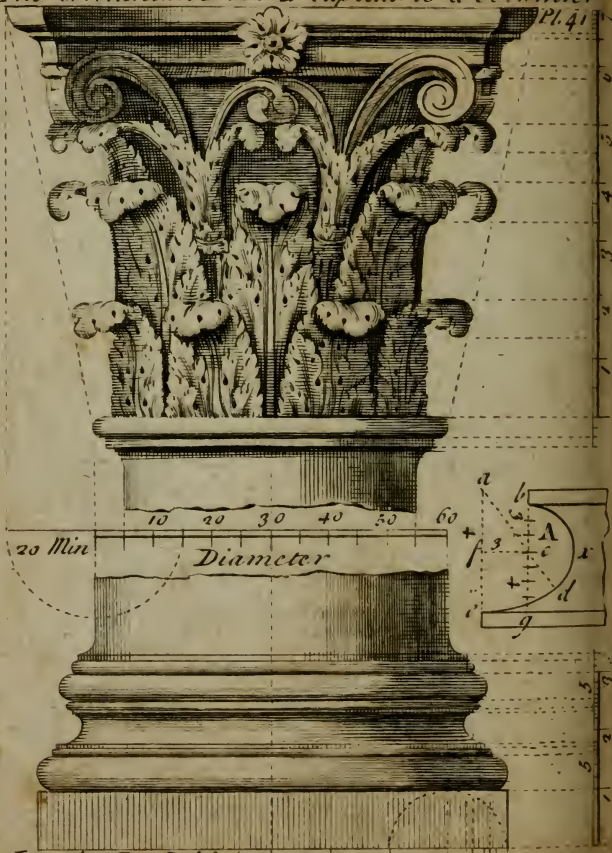
Plate 10.



T. L. Sculp

The Corinthian Base & Capital to a Column.

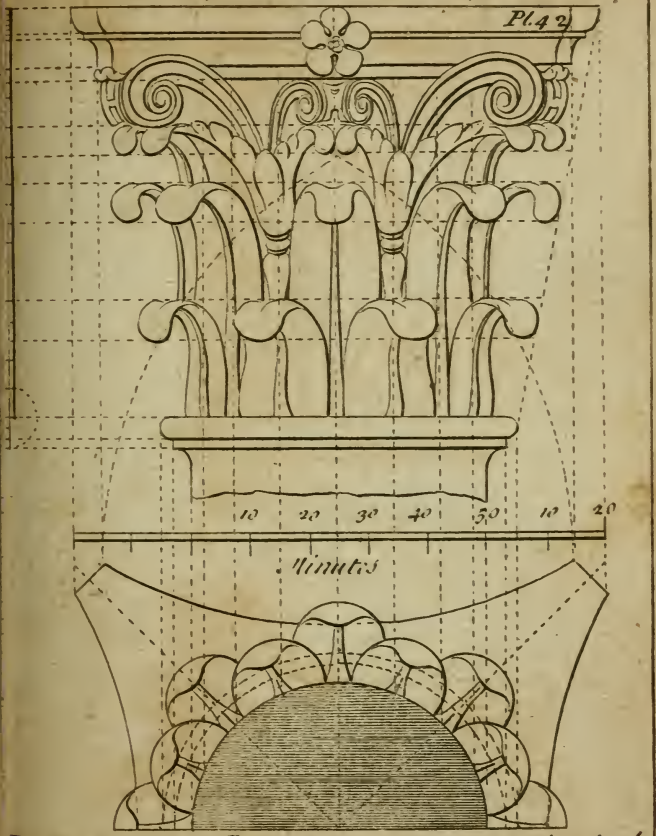
Pl. 41



Tho. Langley Inv. Del. & Sculp. 1741

The Corinthian Capital with its Plan for a Column

Pl. 42



Batty Langley Invent 1741.

T. L. Sculp

Corinthian Capital for a Column at large.

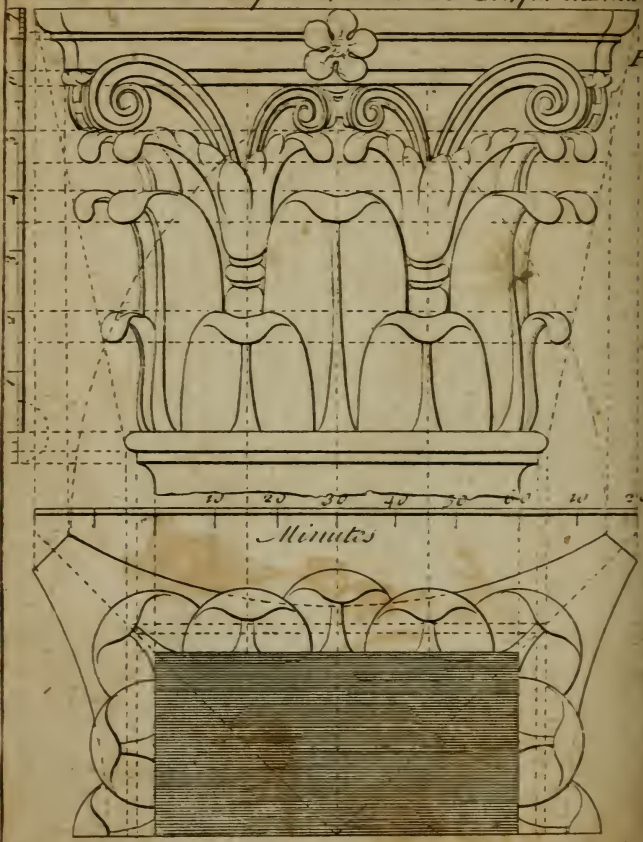
Pl. 43

B. Langley Inv.t 1741.

S. I. Sc.

The Corinthian Capital, with its Plan, for a Pilaster

Pl. 45



Batty Langley Invent 1741.

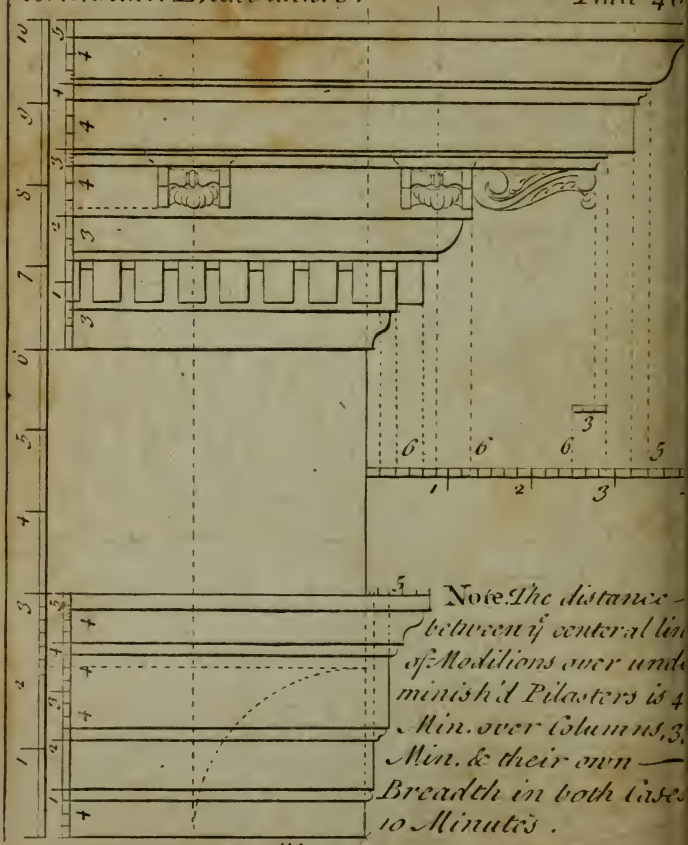
T. I. Sculp.

Corinthian Capital for a Pilaster, at large.

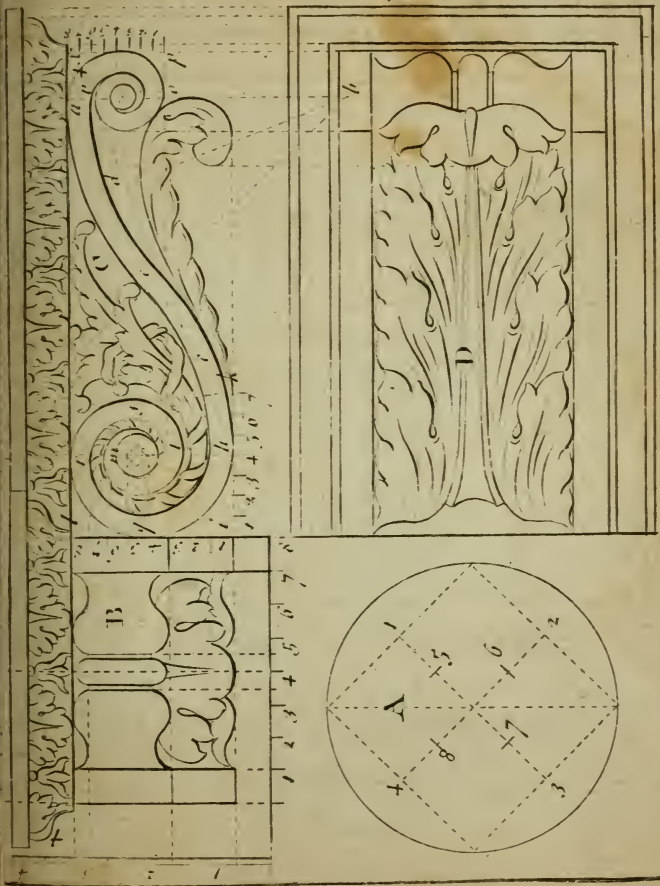
Pl. 45

B. Langley Inv.t 1741.

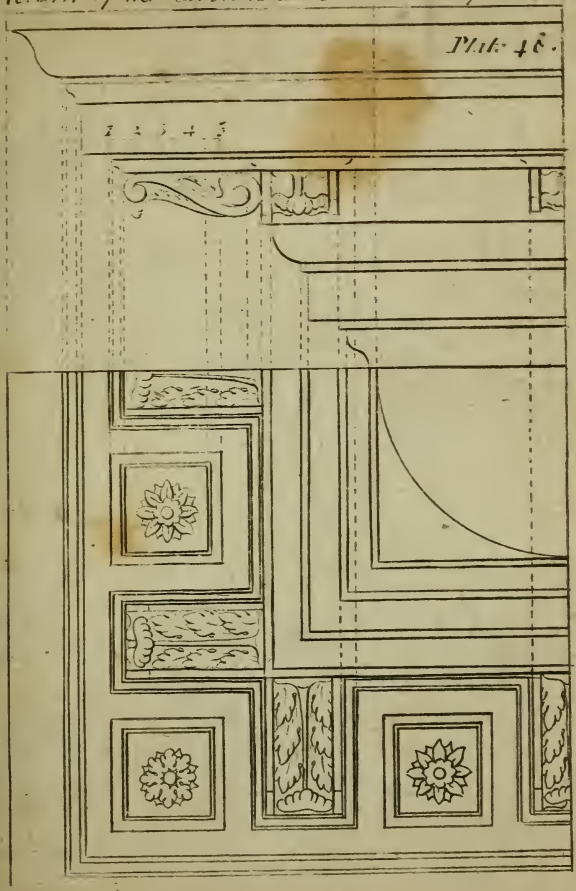
T. L. Sculp.


Note. The distance
between ye central lin
of Modilions over unde
minish'd Pilasters is 4
Min. over Columns, 3
Min. & their own
Breadth in both case
10 Minutes.
25. Min.

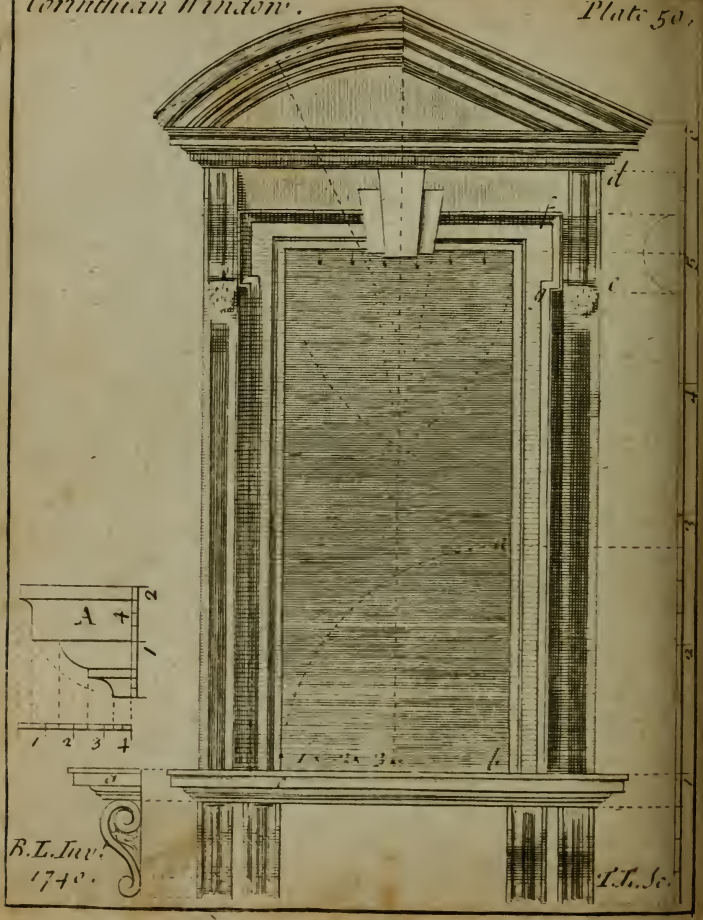
The Corinthian Modillion explain'd. Plate 47.

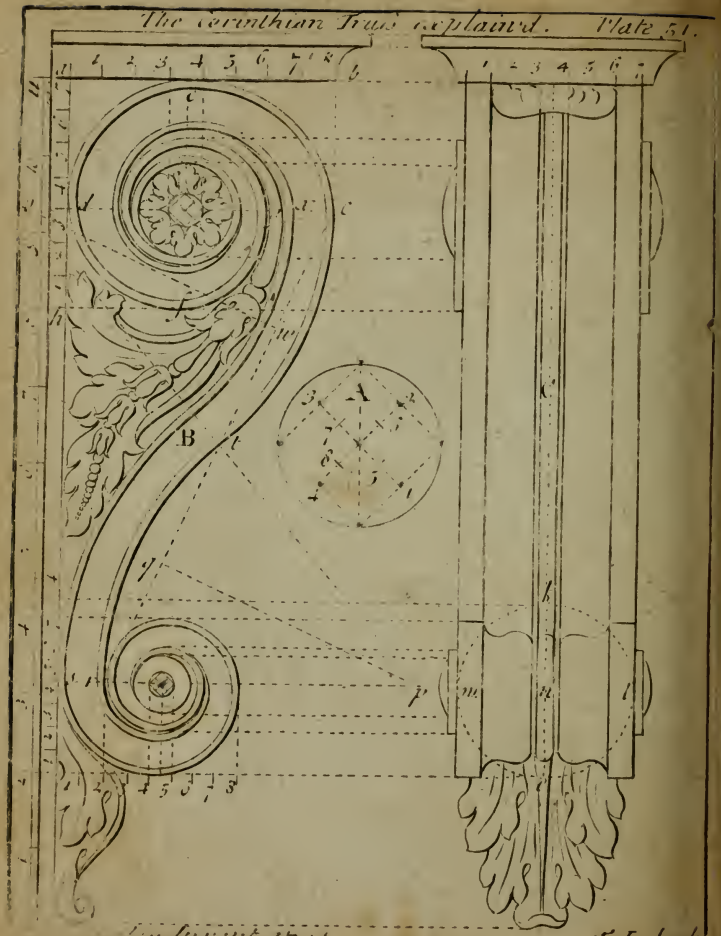


The Picture of the Corinthian Planceor explaind.



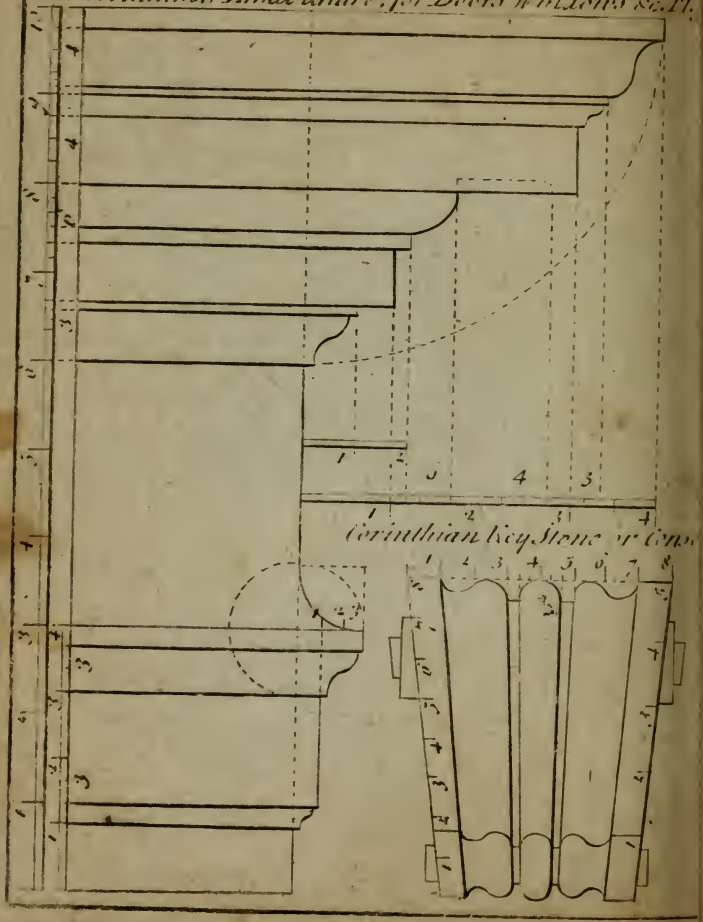
Diameters
1/2 1.D. 1/2
2.D. 1/8
2.D. 1/2
1/2 1.D. 1/2
M. Invent
1740
F.L. Dec.
7 Diameters.


d
c
A
2
1
1 2 3 4
B.L. Inv.
1740.
T.T. Sc.



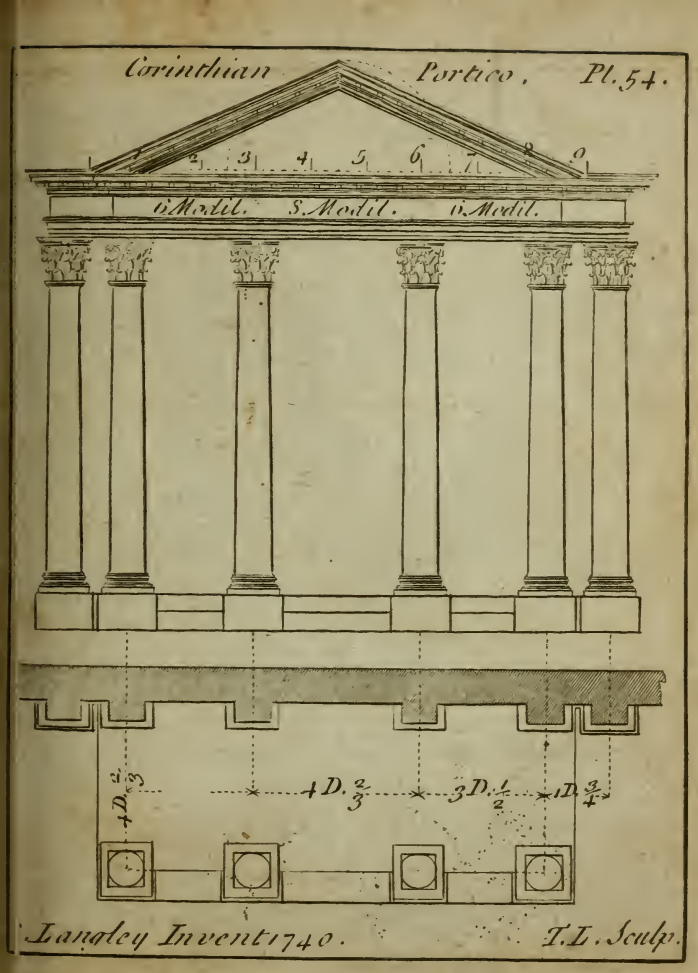
Pu Invent. 1741. T. L. Sculp.

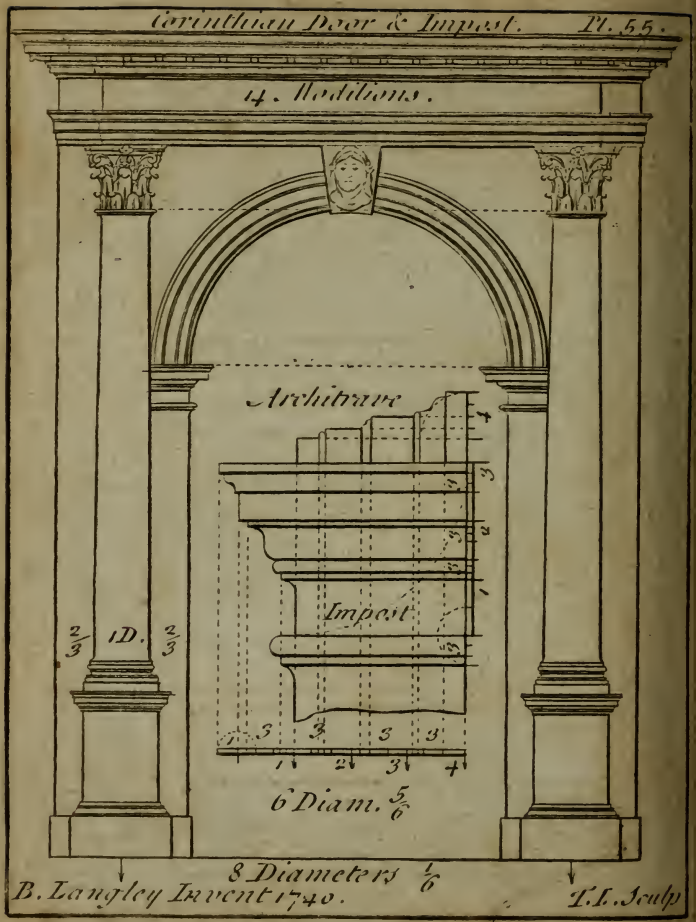
The Corinthian Entablature, for Doors Windows &c. Pl.



Corinthian Intercolumnations.
7. Modilions
6. Modil.
5. Modil.
4. Modil.
B. I. Invent
1740.
4 Diam. 5 Min.
3 Diam. 30 M.
2 Diam. 55 M.
2. Dia. 20 M.
I. I. Sculp.

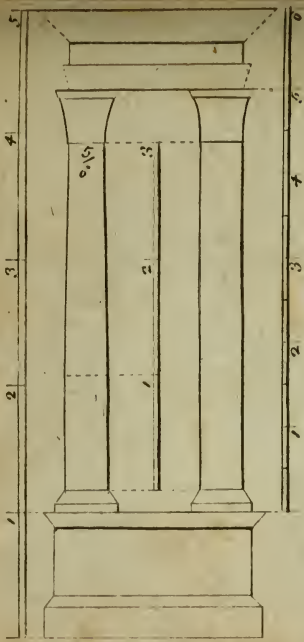
Plate 53.

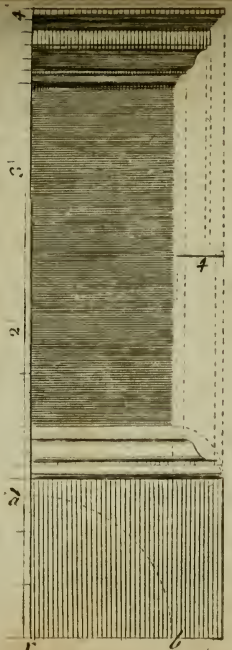

Corinthian Portico. Pl. 54.
1 2 3 4 5 6 7 8 9
6 Modul. 8 Modul. 6 Modul.
4 D. 2/3
3 D. 1/2
1 D. 3/4
Langley Invent 1740.
T.L. Sculp.

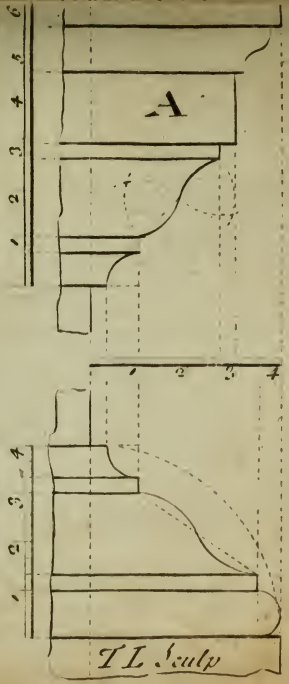

Corinthian Door & Impost. Pl. 55.
14. Modilions.
Architrave
Impost
2/3 1D. 2/3
6 Diam. 5/6
8 Diameters 1/6
B. Langley Invent 1740.
T.I. Sculp

3. Mod.
11. Modiliens
3. Mod.
11. Modiliens.
12
1/2
5 Diam. 25. M.
1/2
1D.
1D.
1/2
5 Diam. 25. M.
B. L. Invent
1740.
T. L. Sculp
1D. 3/4
6 Diam. 25. Min.
1D. 3/4
6 Diam. 25. Min.

Plate 56.





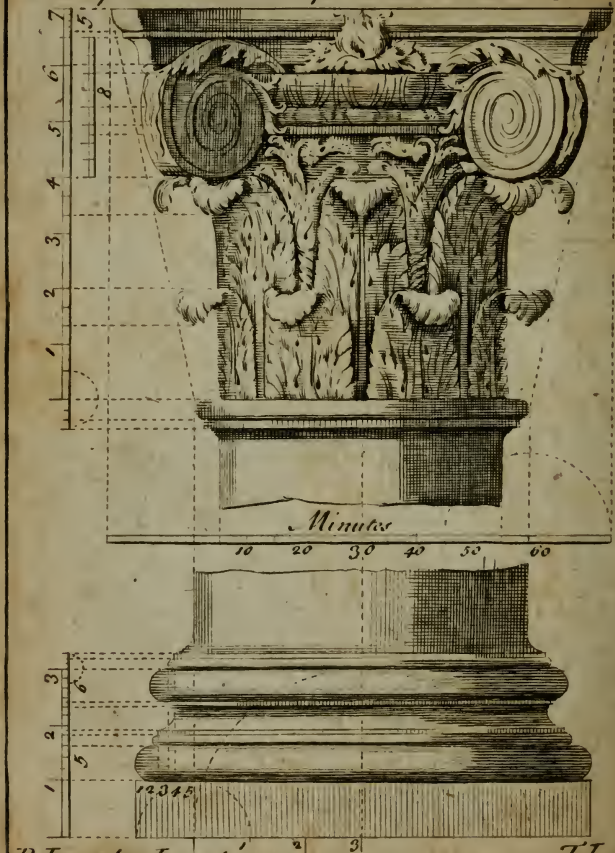


B. Langley Invent 1740

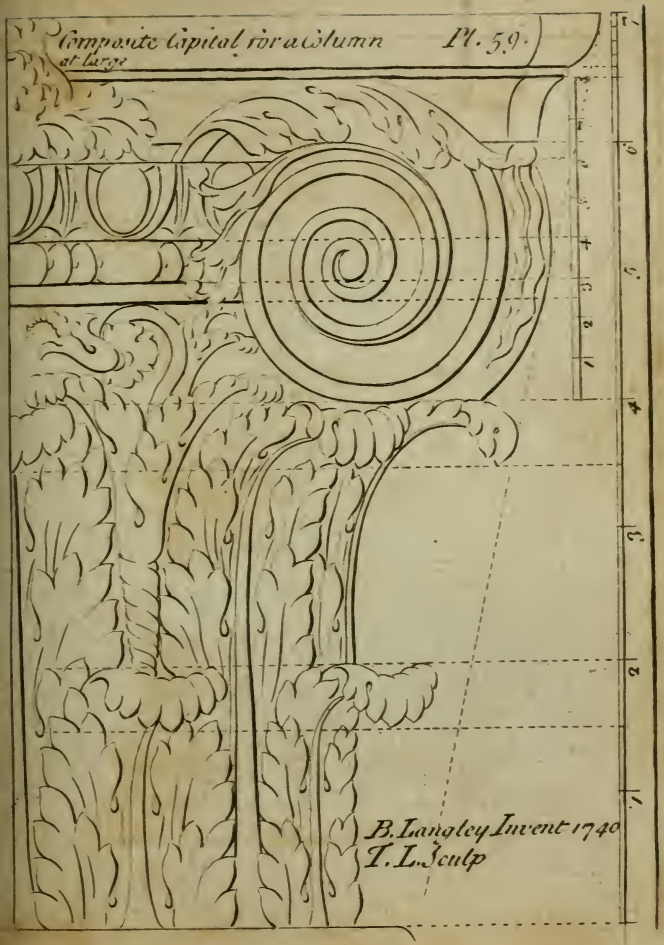
T.L. Sculp

Pl. 57.

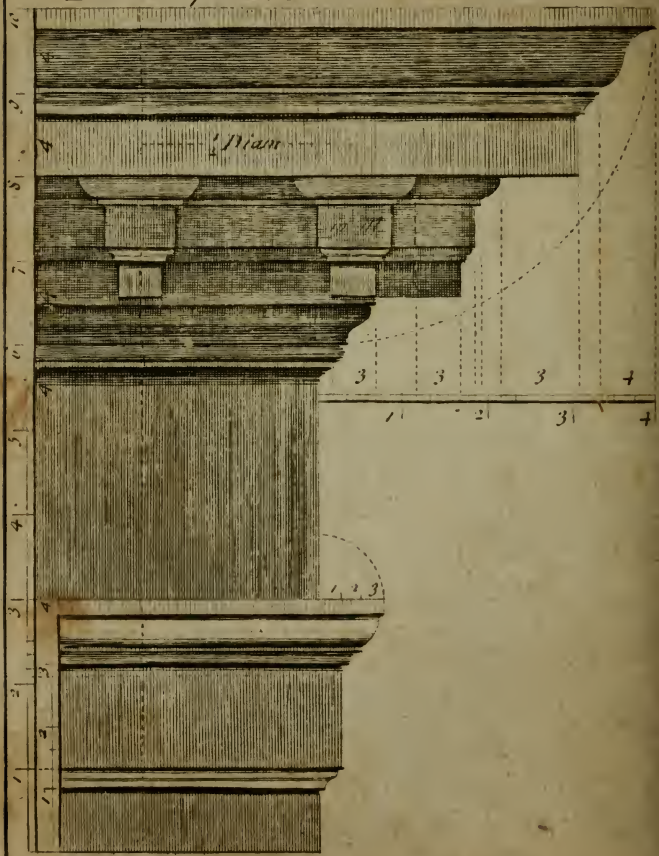
The Composite Base & Capital to a Column Pl. 58.



B. Langley Invent 1740 T. T. Sculp

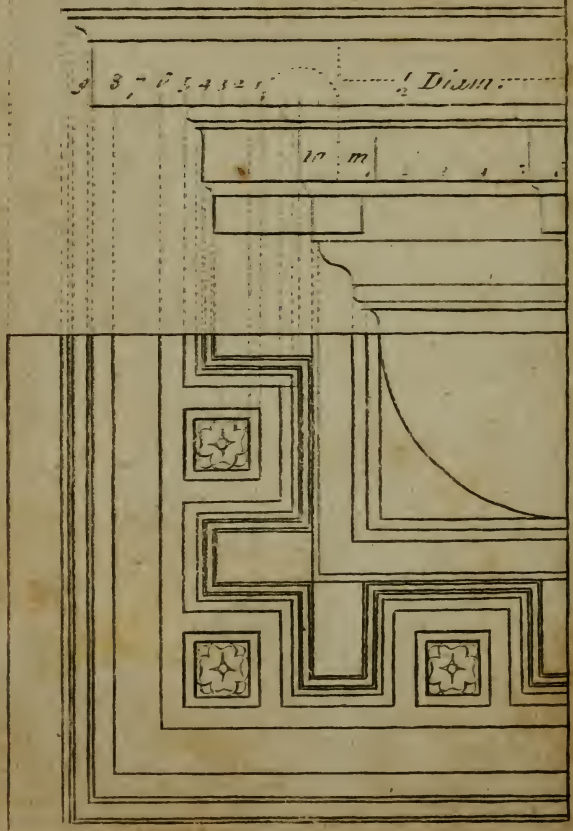

Composite Capital for a Column at large
Pl. 59.
B. Langley Invent 1740
T. L. Sculp

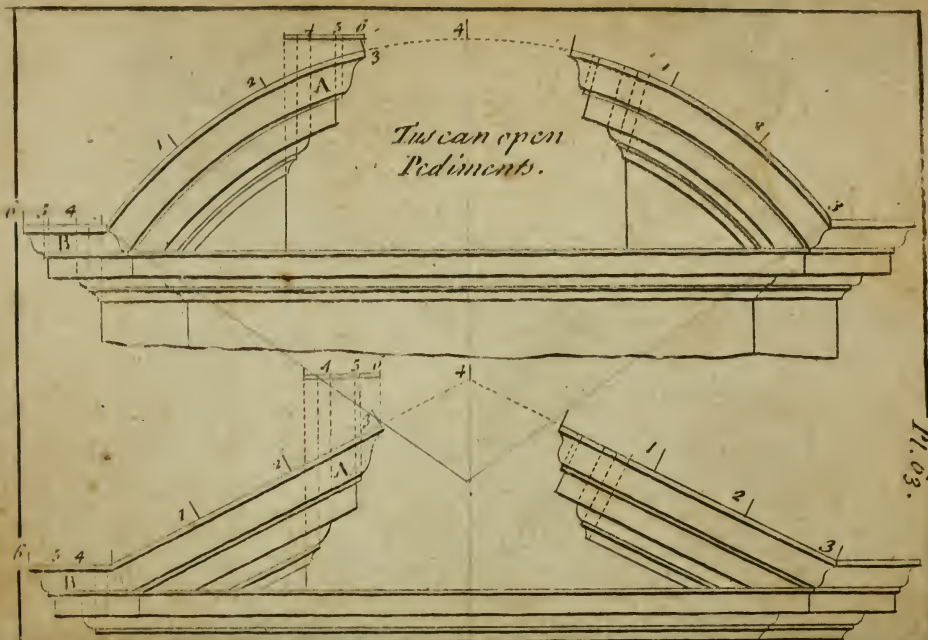
Composite Capital for a Pilaster at large.
Pl. 65.
B. Langley Invent 1740.
T. Langley Sculp.


Diam
1
2
3
4

Pl. 62.

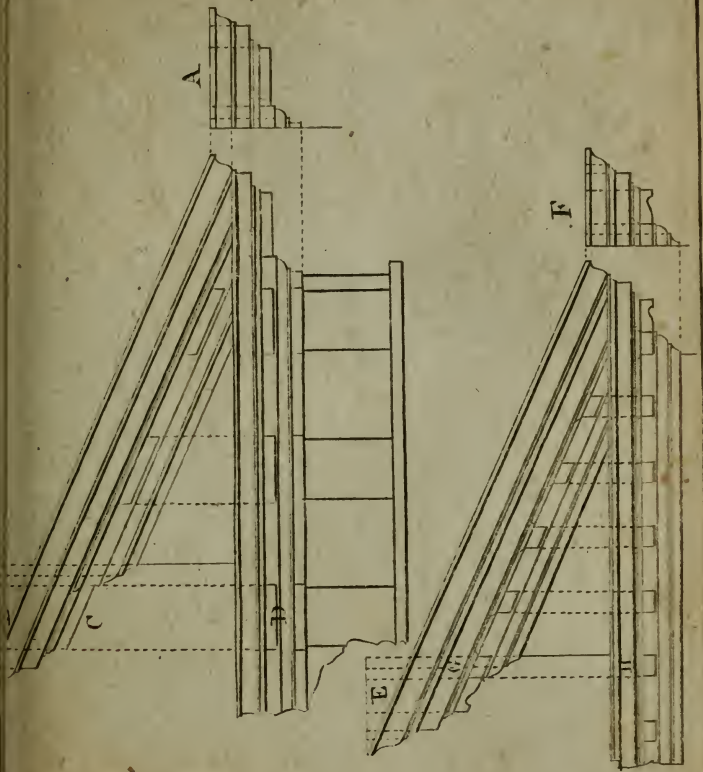
The Planes of the Composite Cornice.

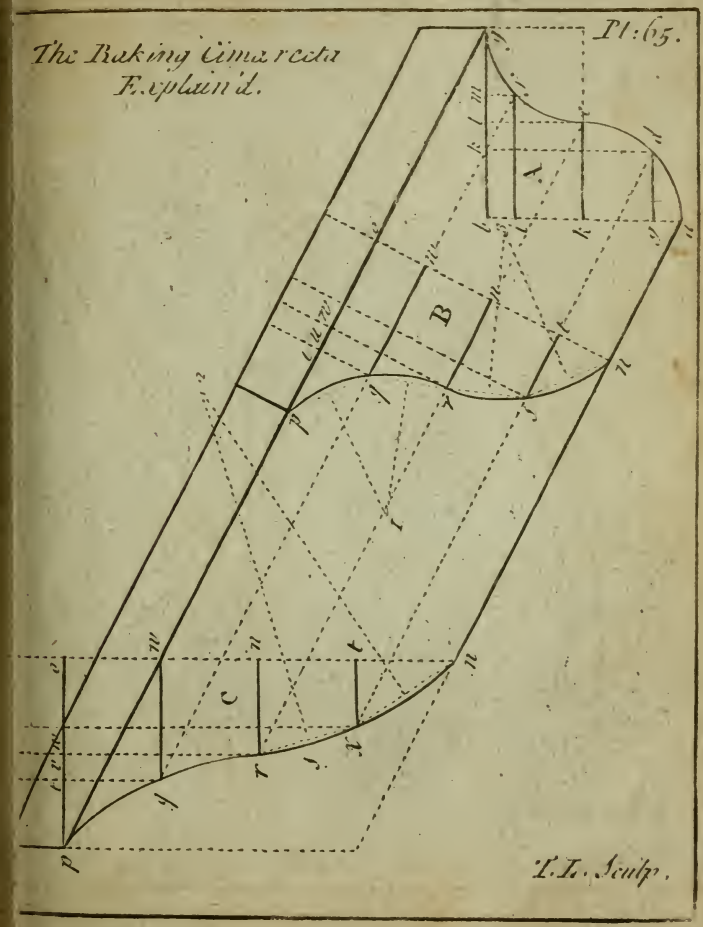




Make y Projections 4. 5. 6. at A equal to y Projec.ns 4. 5. 6. at B

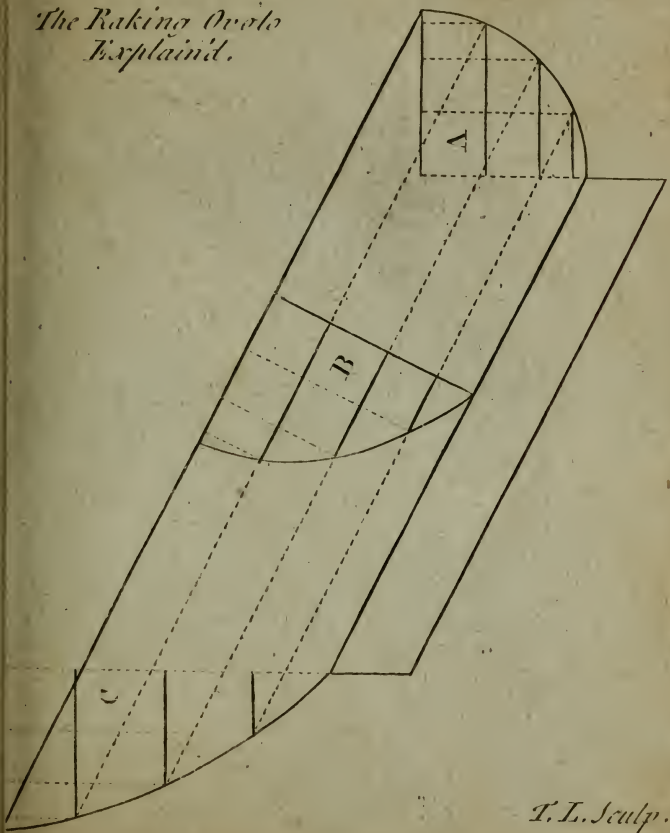
e Dorick & Ionick open Pediment Explain'd. Pl. 64




The Raking Cimarcata
Explain'd.
Pl: 65.
A
B
C
T. I. Sculp.

Pl. 60.

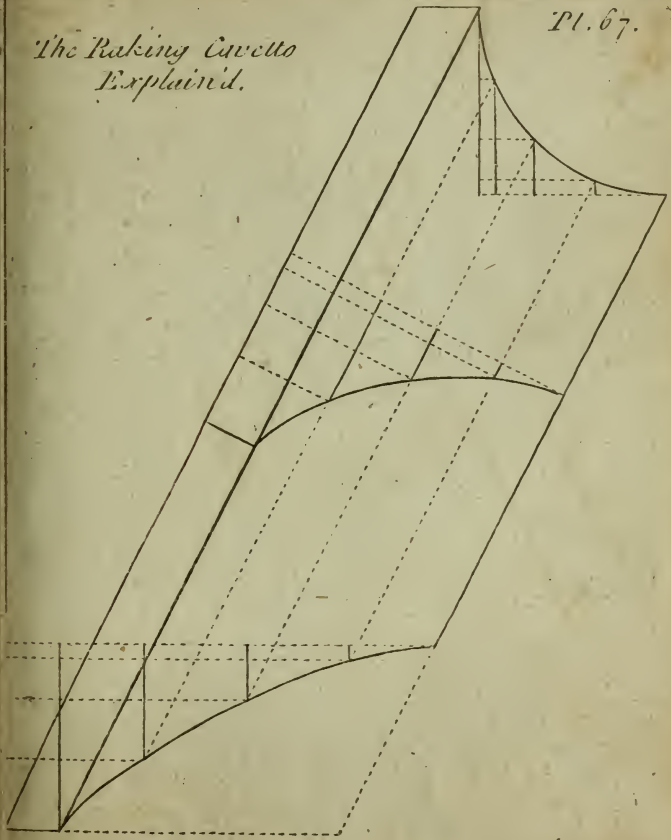
The Raking Ovolo Explaind.



T. L. Sculp.

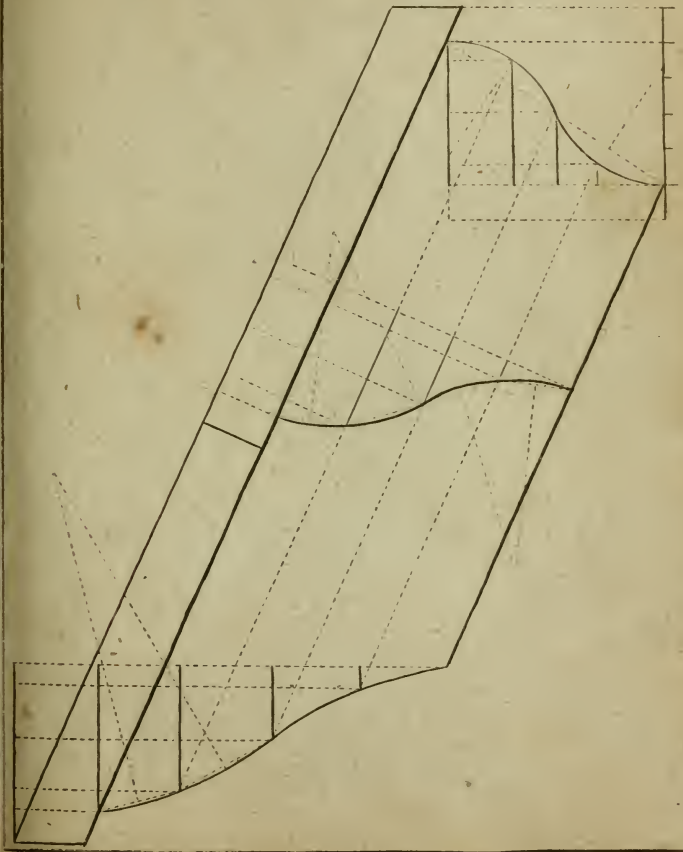
The Raking Cavetto Explain'd.

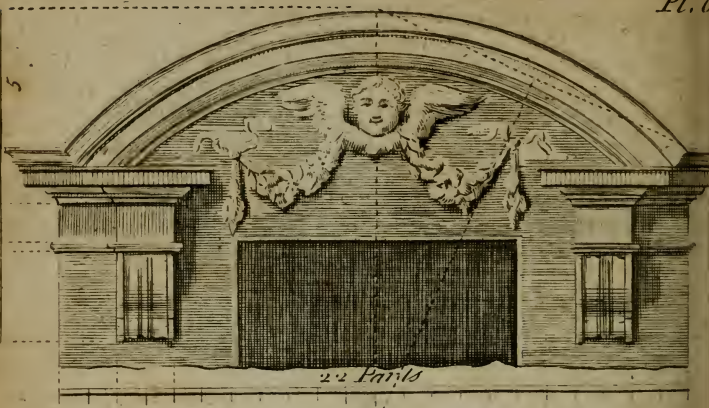
Pl. 67.



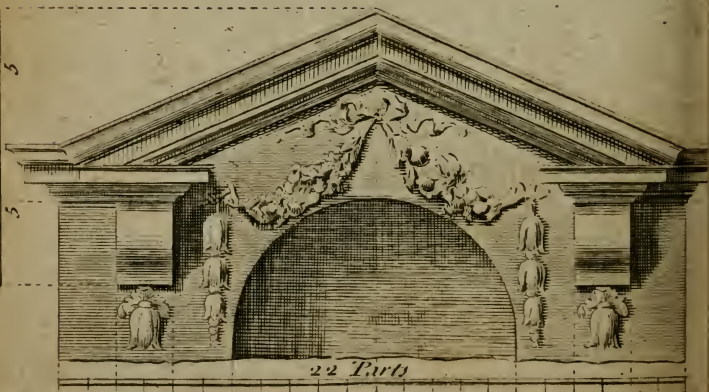
T. L. Sculp.

The Baking Cima reversa Explain'd. Pl. 68

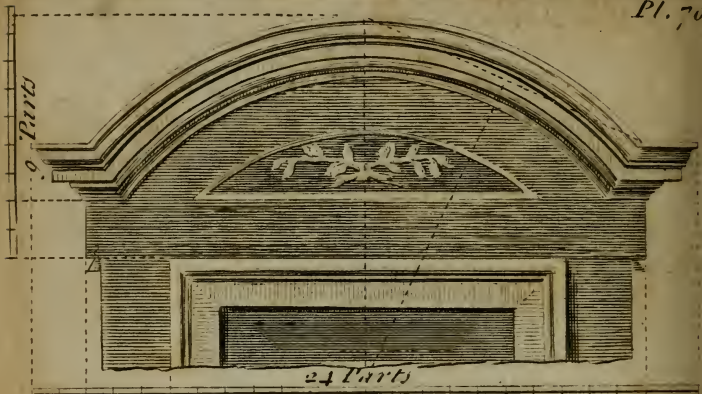




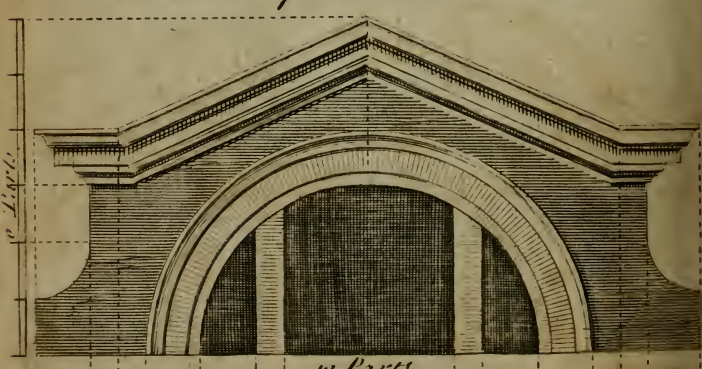
Open Bed mould Pedim.ts



B. Langley Invent 1740 T.L. Scu

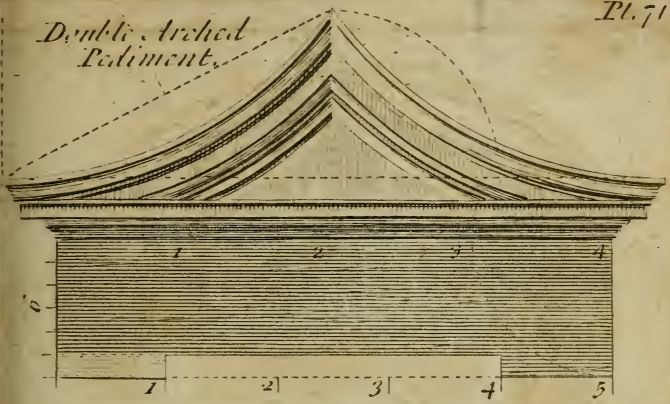


Pediments of continued Cornices.

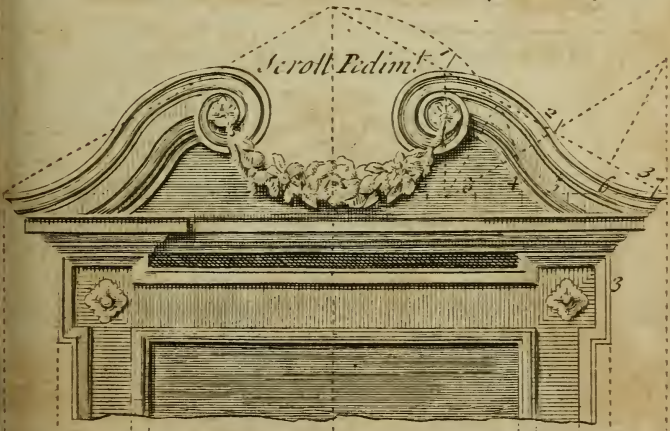


B. Langley Invent 1740. T.L. Sculp.

Double Arched Pediment.

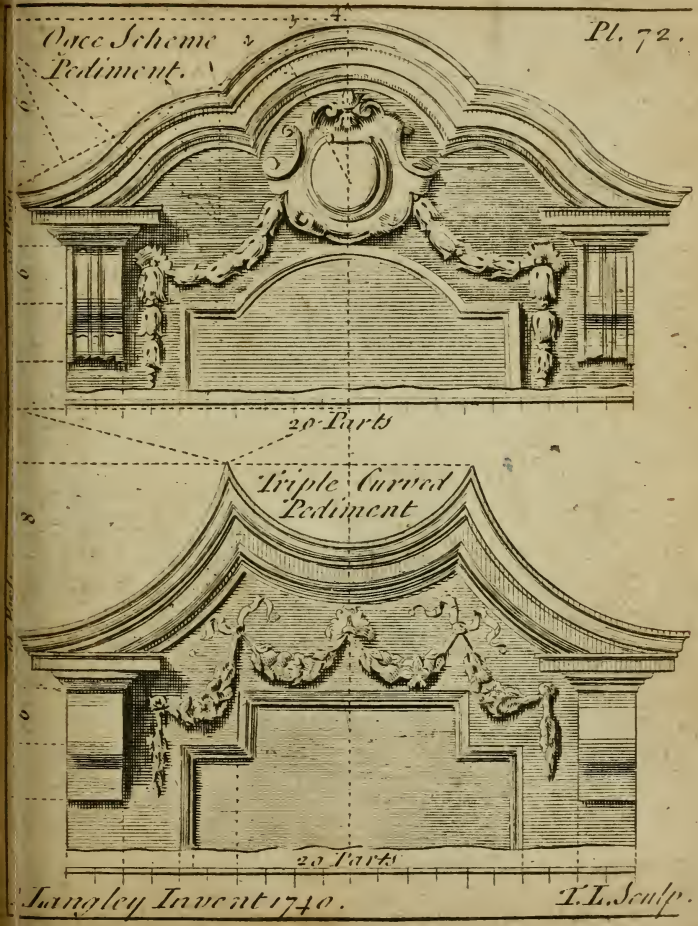


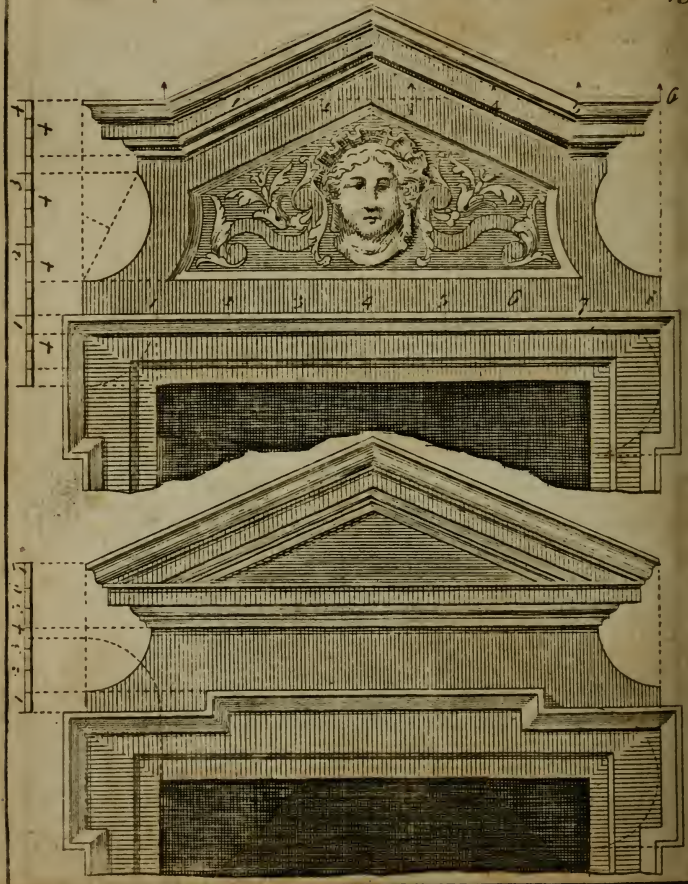
Scroll Pedim.t

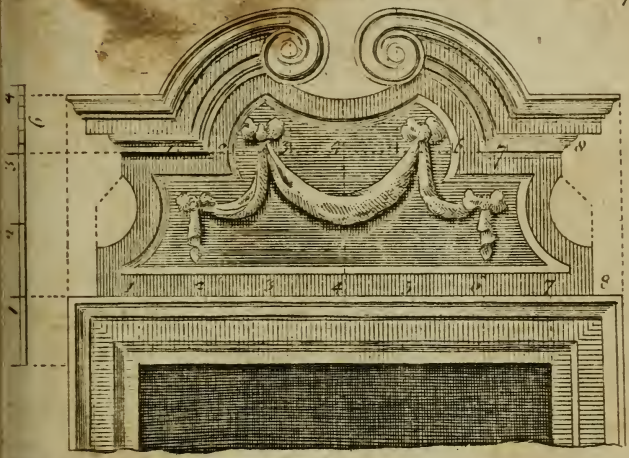


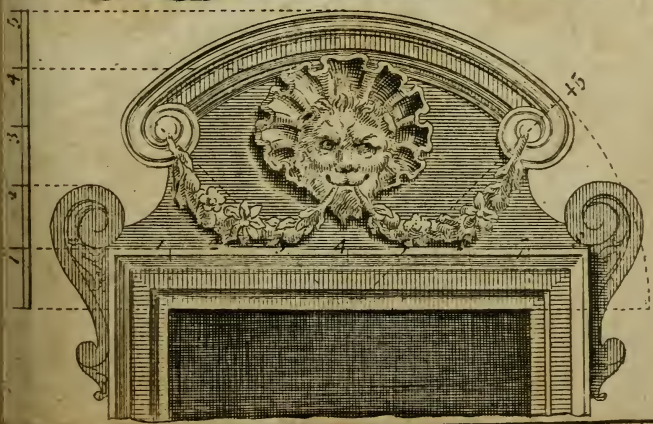
12 Parts.

B. L. Invent 1740. T. L. Sculp.

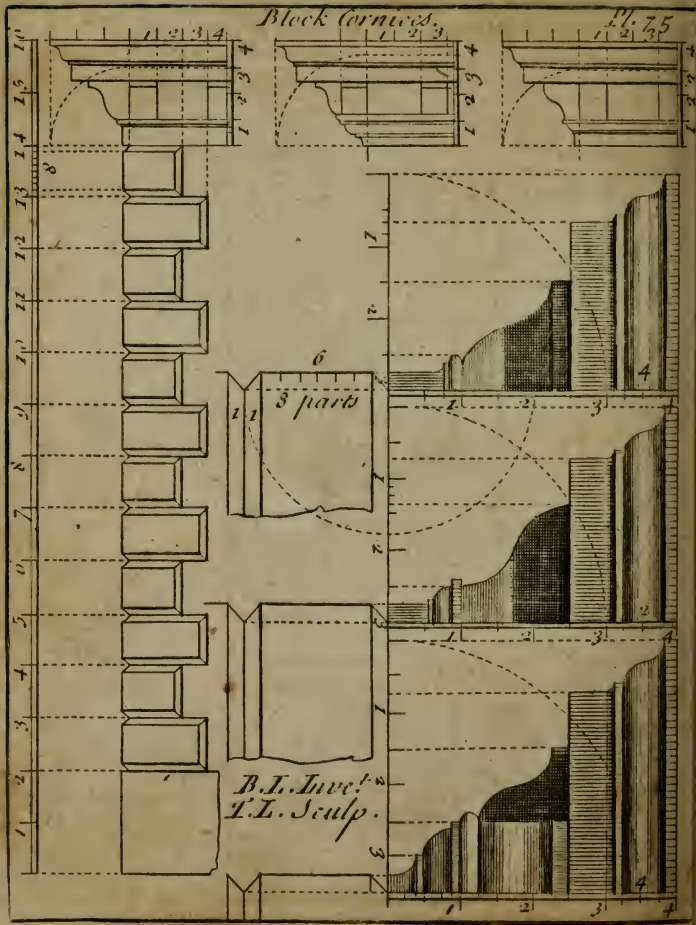

Ogee Scheme Pediment.
Pl. 72.
20 Parts
Triple Curved Pediment
20 Parts
Langley Invent 1740.
T.L. Sculp.



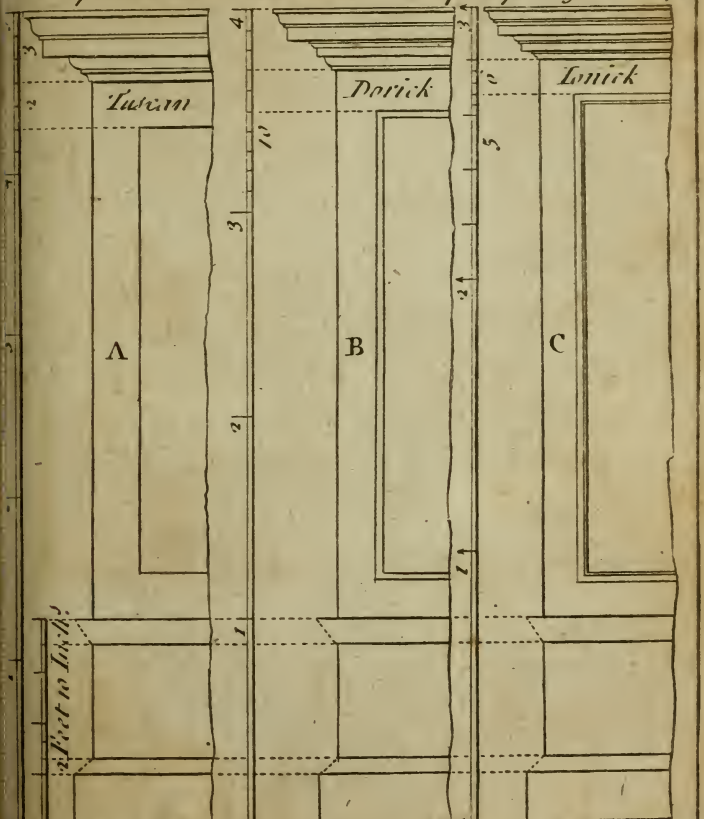




T. Lateulin Sculp.

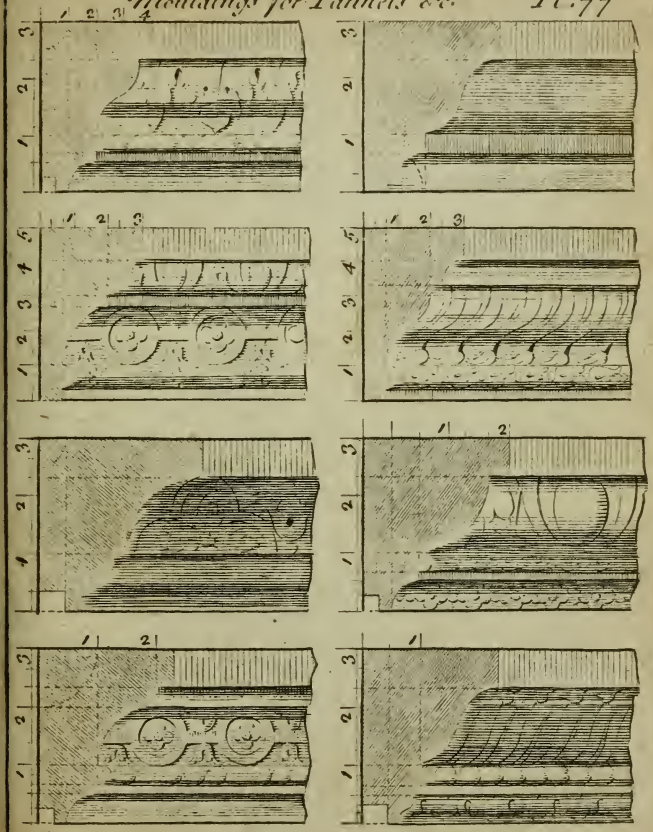

Block Cornices.
Pl. 75
6
3 parts
B.L. Invt.
T.L. Sculp.

To Proportion Cornices to Rooms of any Height. Pl. 76



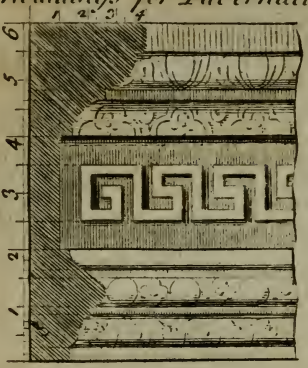
B. Langley Invent 1740.

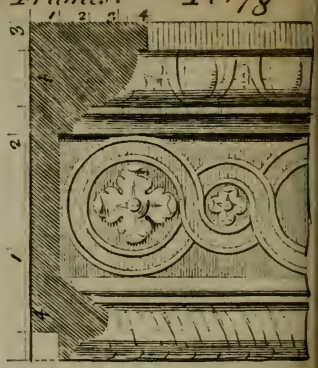
T. T. Sculp.

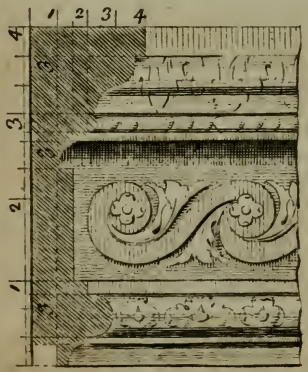


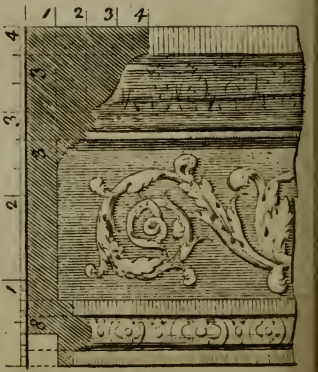
Thomas Langley Inv. and Sculp. 1741.

Mouldings for Tabernacle Frames. *Pl. 78*





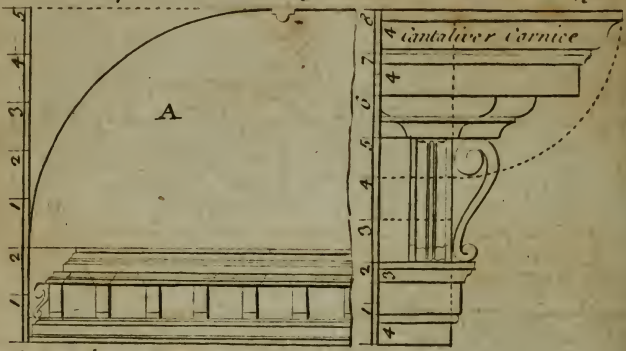




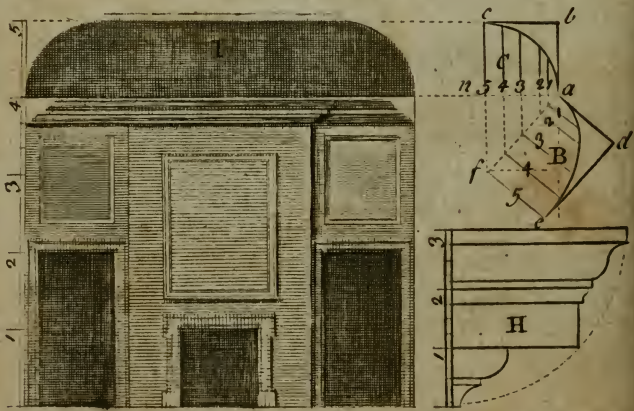
Thomas Langley Inv. and Sculp. 1741

A Cove 4/5 of the entire Height.

Pl. 79



A Cove 5/5 of the entire Height.

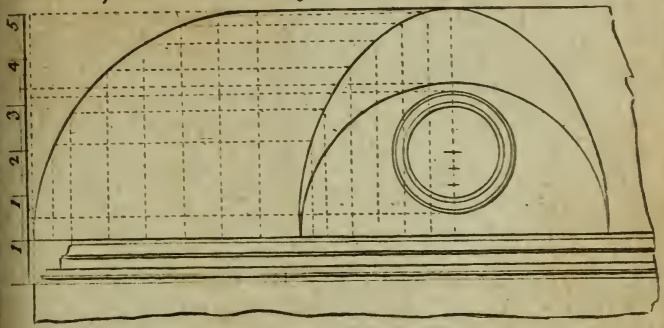


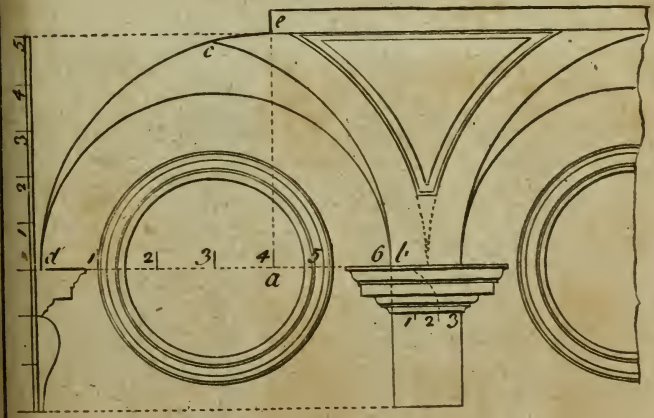
B.L Inv. 1741.

T.L Sculp.

Coves 6 of the entire Height.

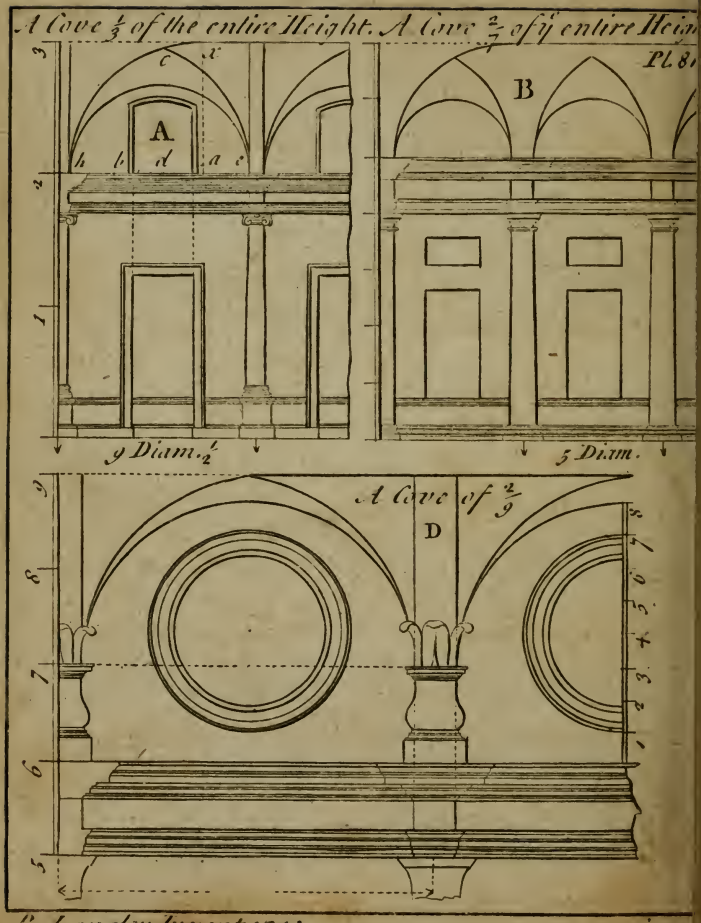
Pl. 80.



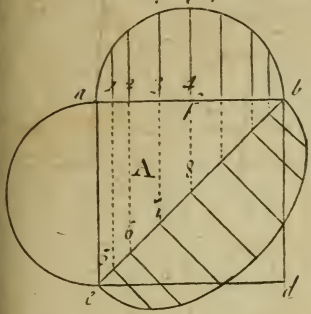


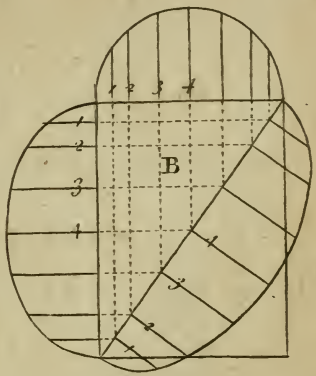
B.L. Inv. 1741.

T.L. Sculp.



B. Langley Invent 1741.


a
b
c
d
A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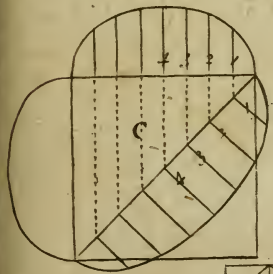
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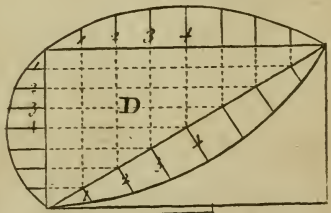
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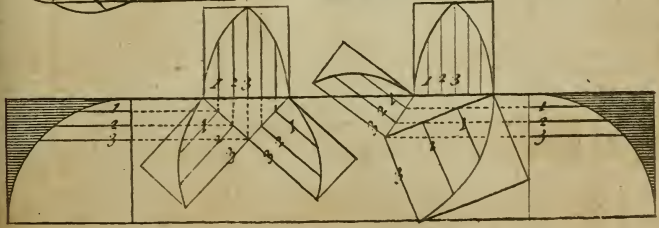
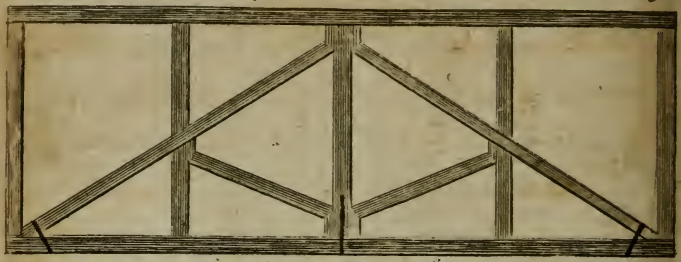
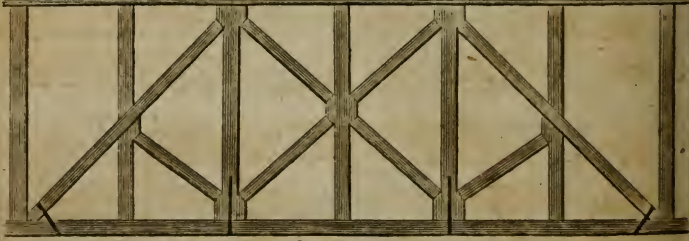




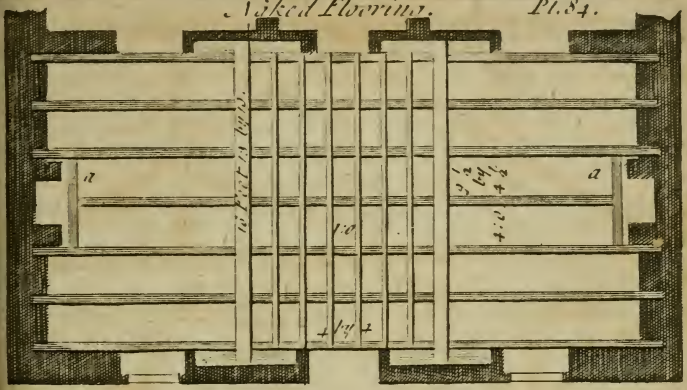
Bearing 40 Feet in ye Clear.

50 Feet.

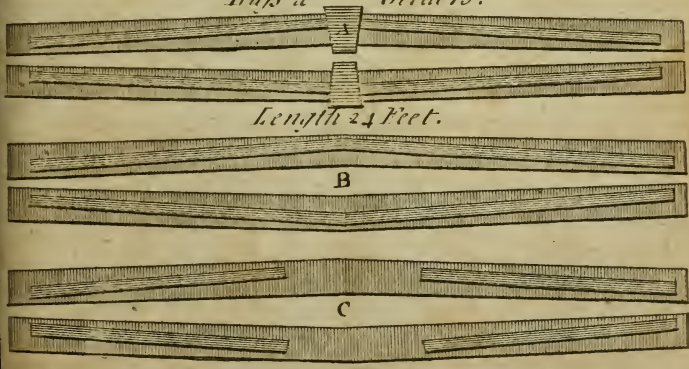


B. L. Inv: 1741. 60 Feet.

Naked Flooring. Pl. 84.

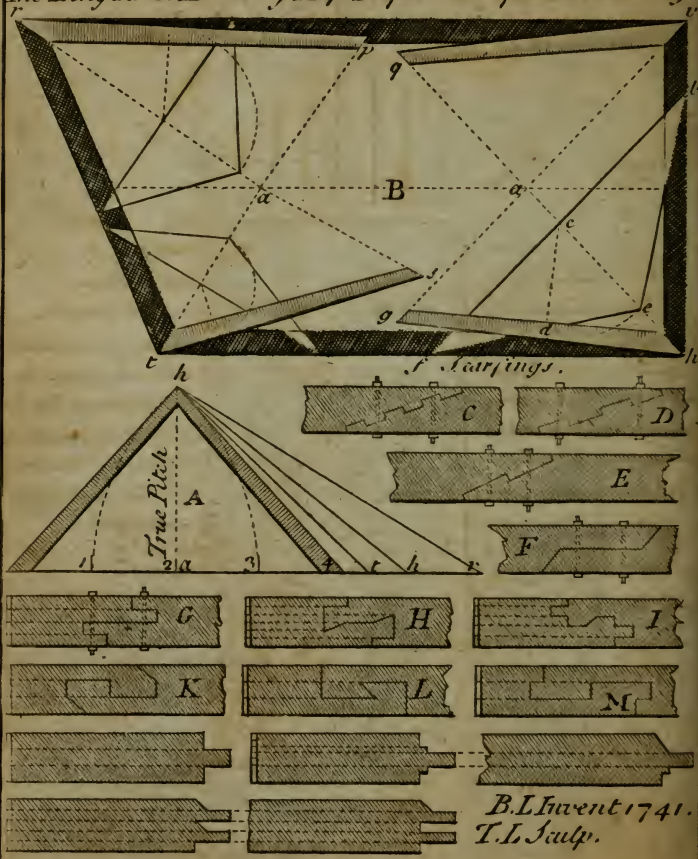


Truss'd Girders.

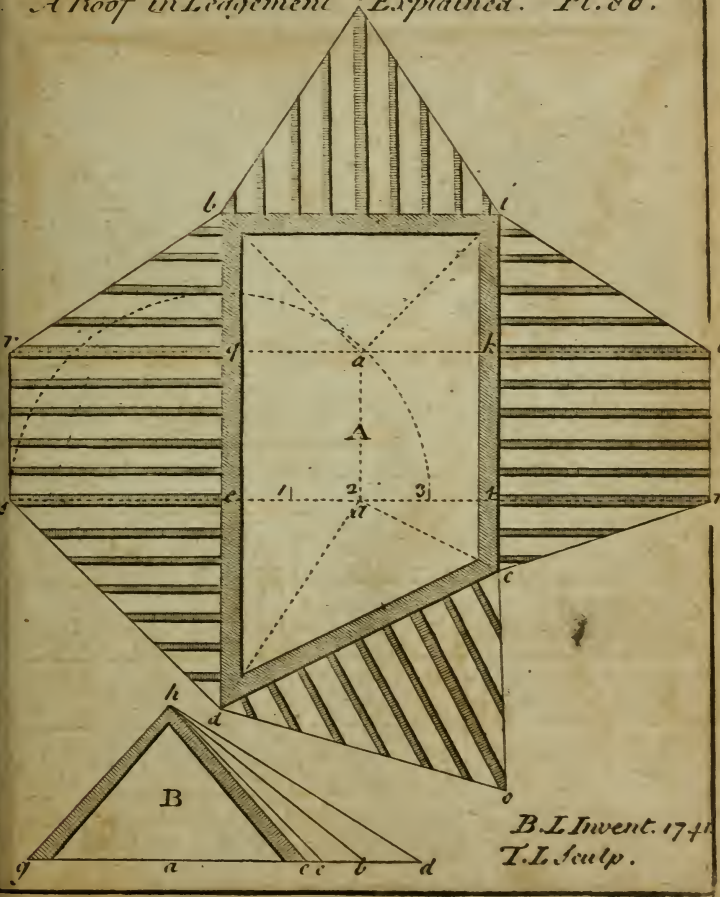


B. Langley Inv: 1741. T. L. Sculp.

The Lengths & Backs of Hip Rafters. Explained Pl. 85

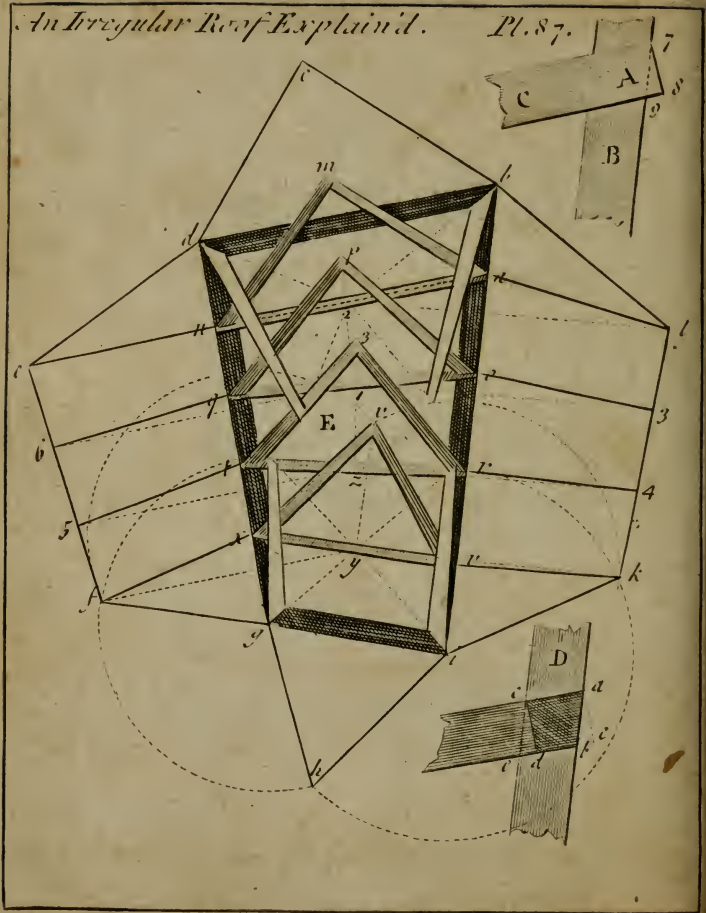


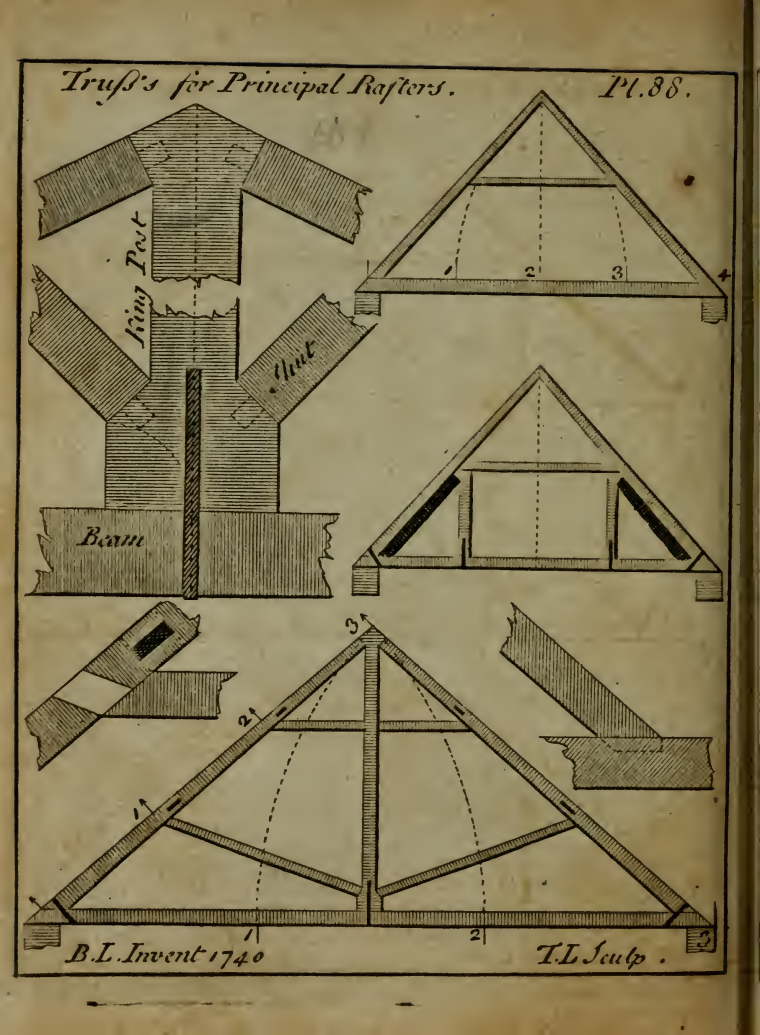
A Roof in Ledgement Explained. Pl. 86.



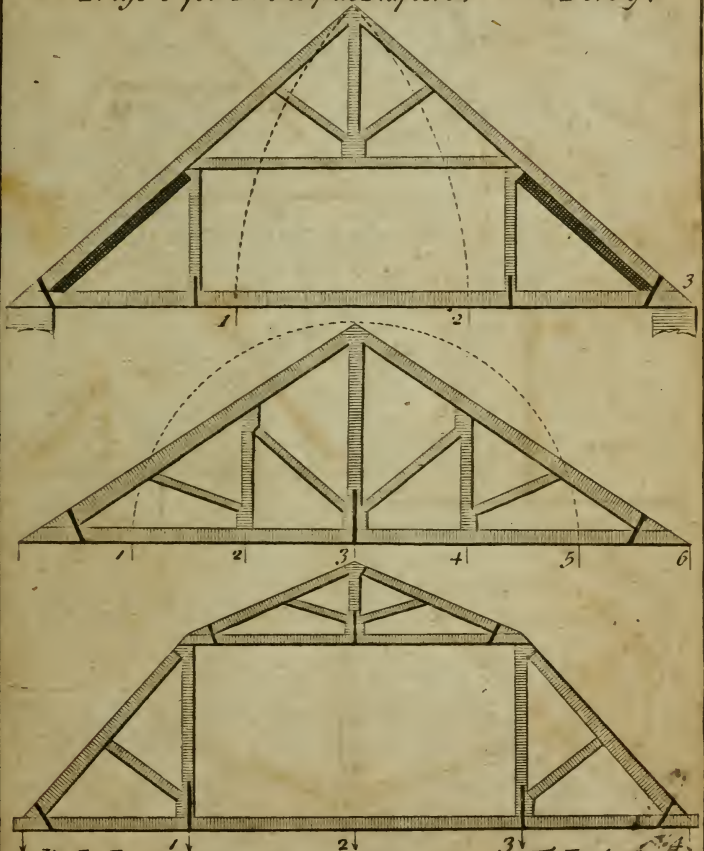
B. I. Invent. 1741
T. I. Sculp.

An Irregular Roof Explained. Pl. 87.




Truss's for Principal Rafters.
Pl. 88.
Ring Post
Strut
Beam
1
2
3
4
B.L. Invent 1740
T.L. Sculp.

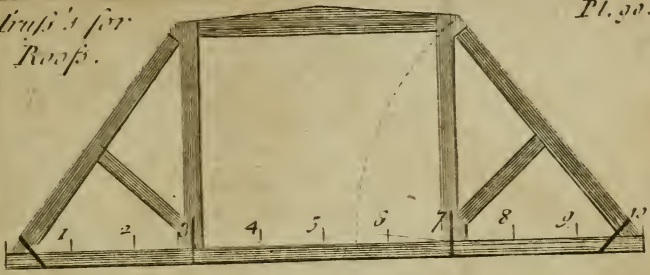
Truss's for Principal Rafters. Pl. 89.

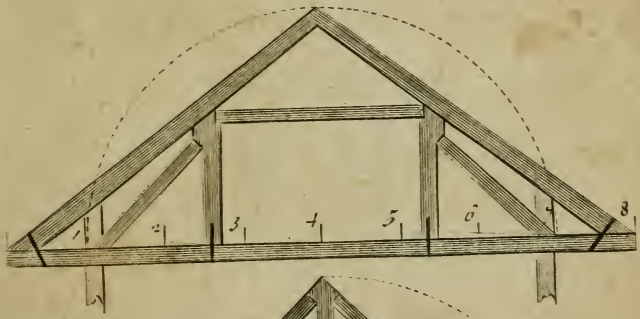


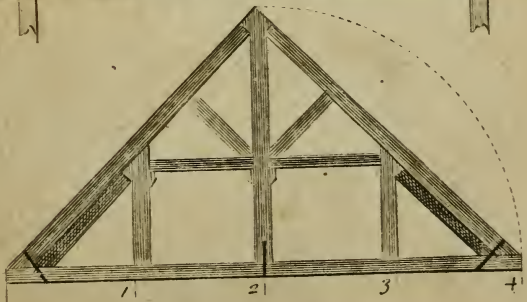
B. L. Invent. 1741 T. L. Sculp.

Trusses for Roofs.

Pl. 90.

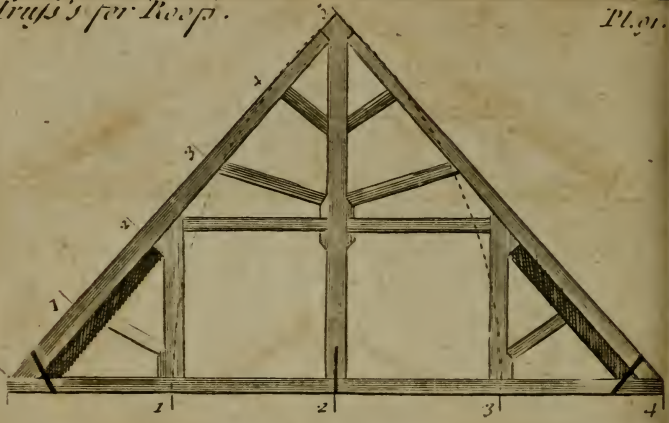


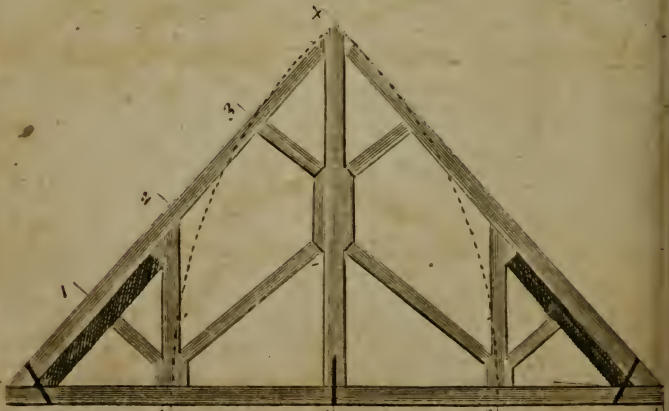




B. Langley Invent 1741.

Truss's for Roofs. Pl. 91.

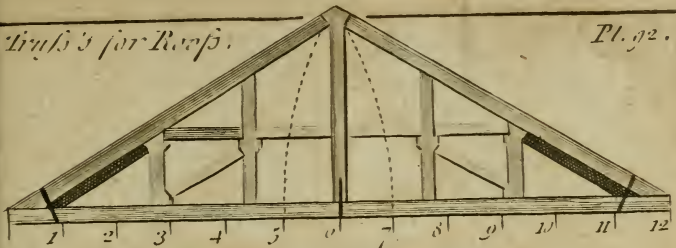


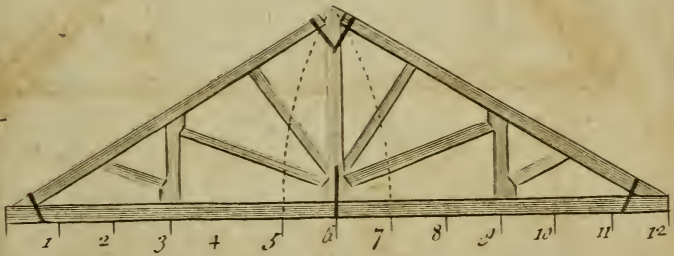


B. Langley Invent 1741.

Truss's for Roofs.

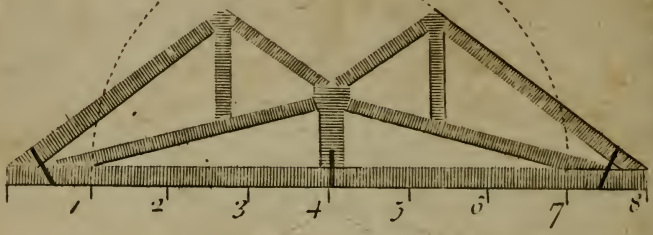
Pl. 92.

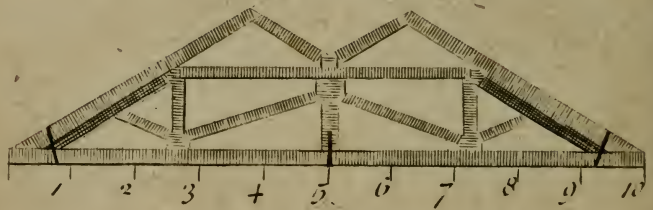


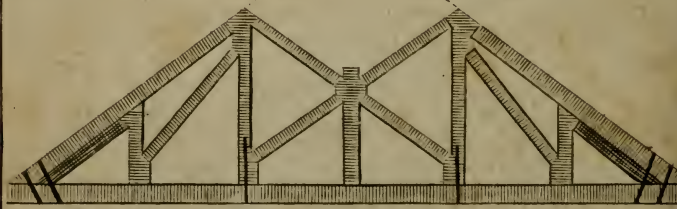


B. Langley Invent 1741.

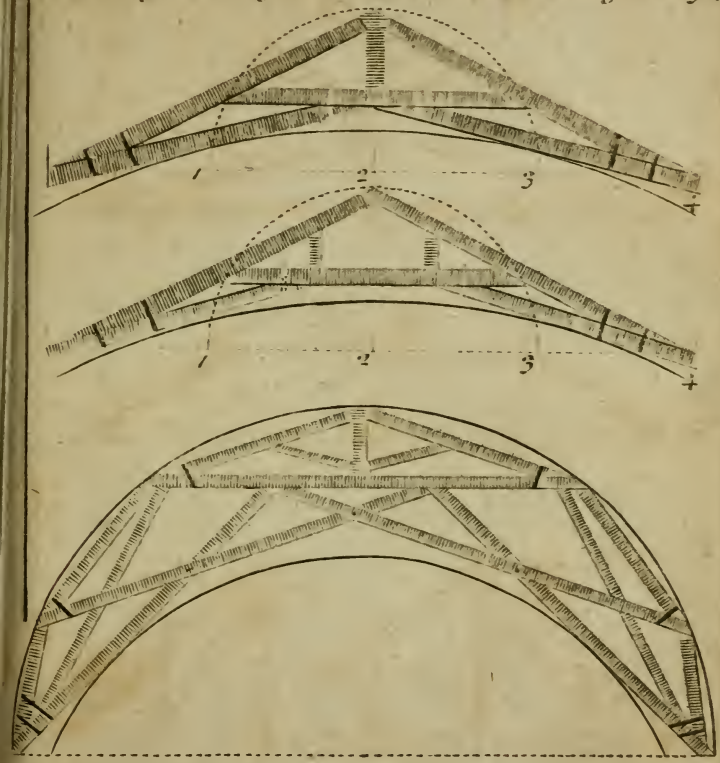
Three Truss's for Roofs. Pl. 93.



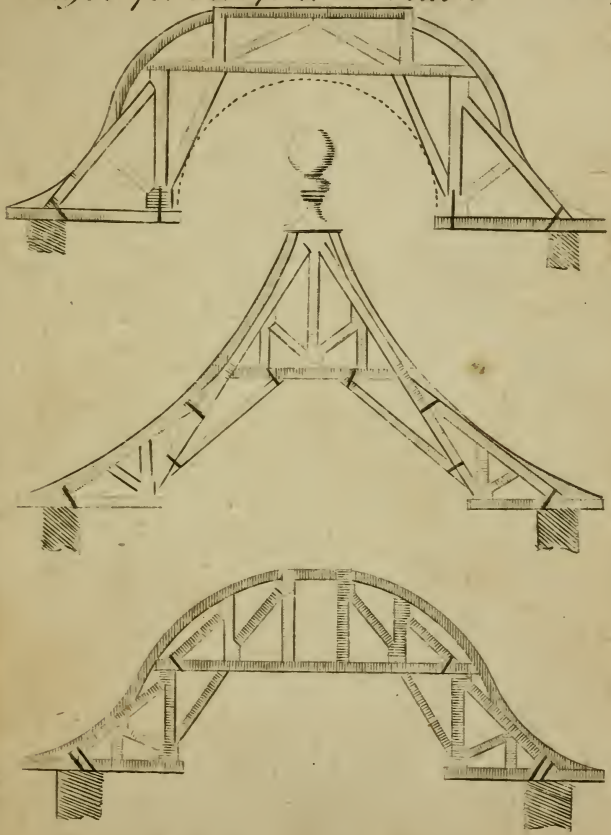




Truss's for Roofs, over arch'd Ceilings. Pl. 94

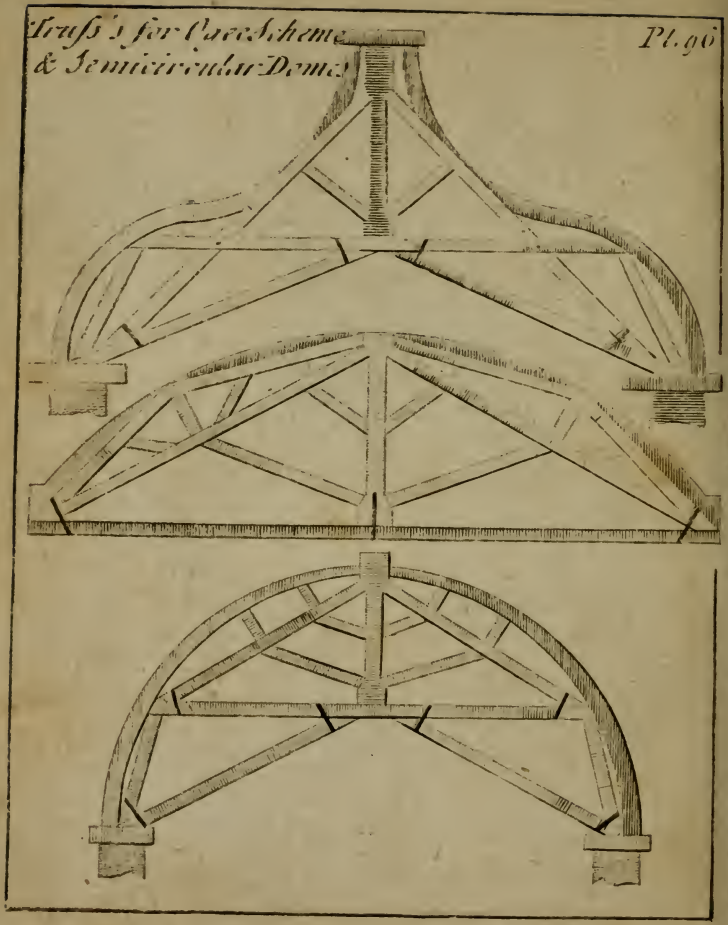


Trusses for Roofs to Pavilions. Pl. 95.

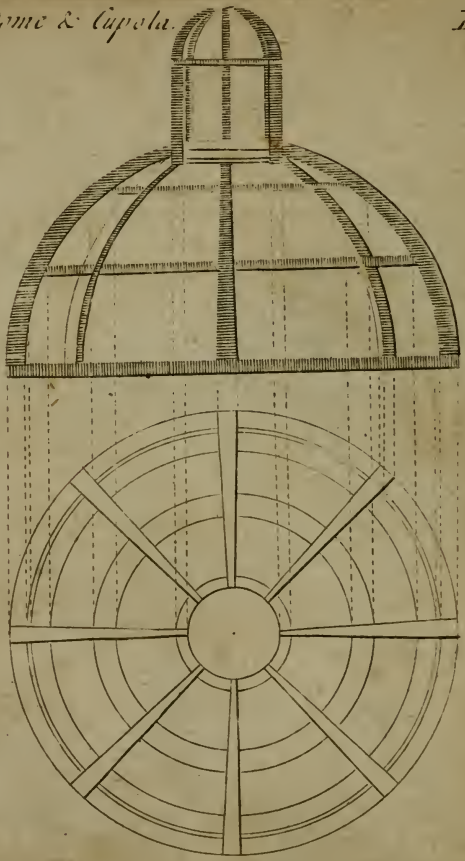


Truss's for Oval Scheme & Semicircular Dome

Pl. 96

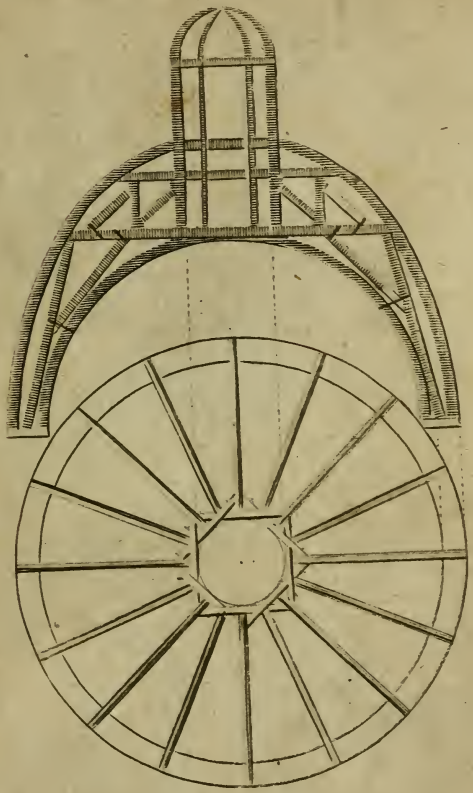


A Rib'd Dome & Cupola. Pl. 97.

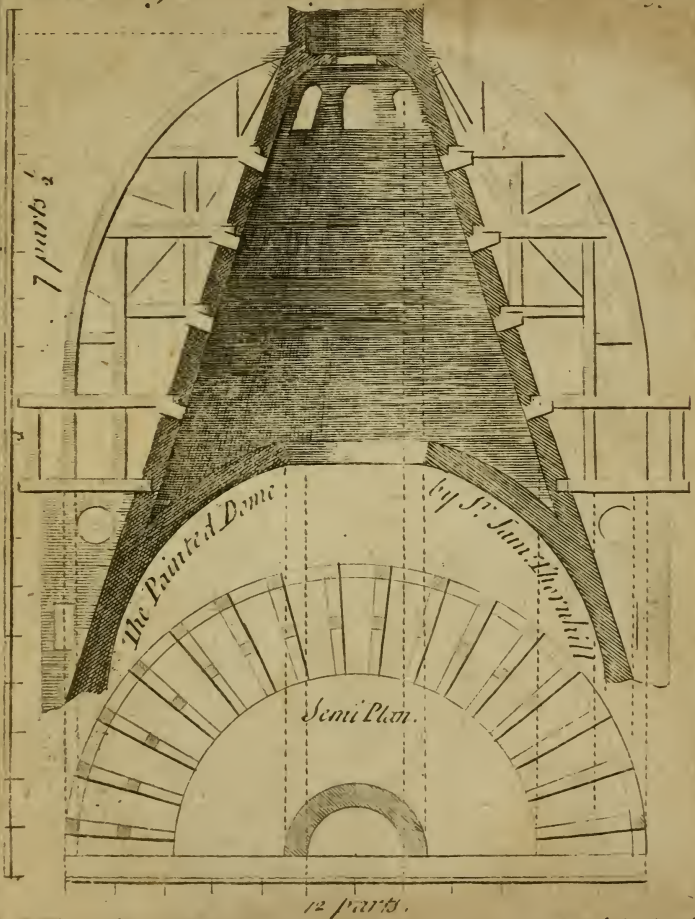


A Truss'd Dome & Cupola.

Pl. 98



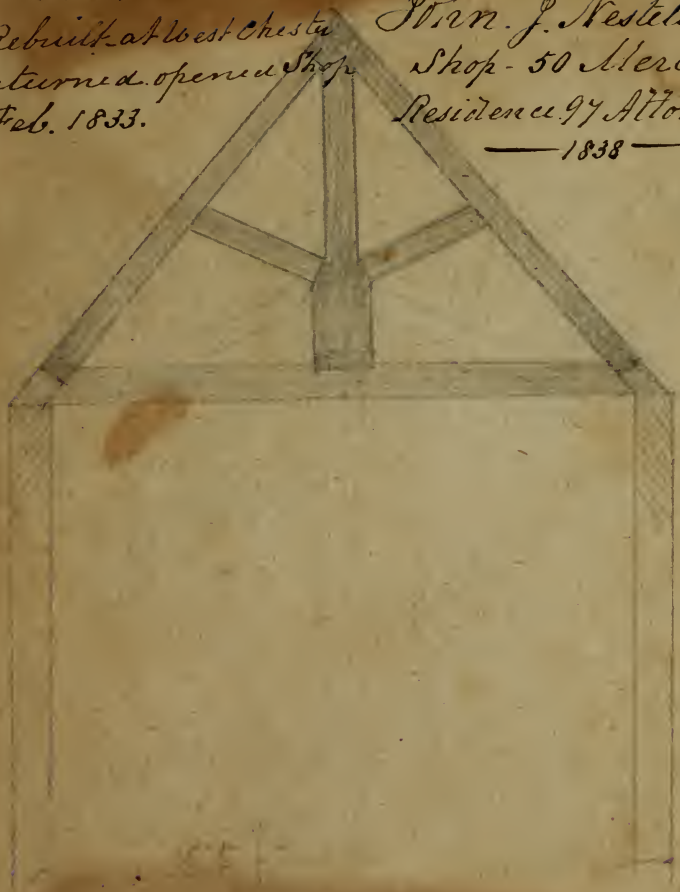
A Section of the Dome of St. Pauls London. Pl. 90.



B. L. Delin. T. T. Scul.

1832. Nov.
Rebuilt at West Chester
returned. opened Shop
Feb. 1833.

John. J. Nestell
Shop - 50 Mercer. St
Residence 97 Attorney St
— 1838 —



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paul breman
collated cpl
pb
rosslyn hill
london nw3